HISTORICAL BUILDING
DES MOINES, IOWA

THE JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION
PUBLISHED MONTHLY

Volume XVII | Jacksonville, Florida, November, 1930 | Number 5

LUETIC HEART DISEASE*

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Scientific investigation of this subject was only begun very recently. Ricord, in 1845, made observations on gummatous myocarditis. From 1890, more exact studies have been made. At first, in addition to changes in the aorta, two groups of cases were recognized, syphilitic inflammation of the coronary arteries, and sclerous myocarditis of syphilitic origin.

Researches made in hereditary syphilis show that all the structures of the heart may be involved, the nourishing vessels, the myocardium, less often the pericardium and the endocardium. First, the coronaries are frequently affected, the periarterial changes, step by step, reaching the myocardium. The lesions by preference are at the very beginning of the coronaries. Next the fine arterioles become involved, infiltration follows with gummatous formation; sometimes obliteration of the vessels occurs with later the stage of sclerosis. Small aneurysms and interstitial hemorrhages may follow.

In acquired syphilis, the process nearly always depends on vascular changes.

Lesions of the myocardium. Gumma are circumscribed lesions, varying in size from pea to walnut, associated with vascular changes. Fibrous reaction around the periphery tend toward sclerosis or softening with ulcerations and may be followed by partial aneurysms; preferably located in the substance of the ventricles, especially the left, or the interventricular septum, here causing various disorders of the cardiac rhythm (best known as Stokes-Adams syndrome); or cardio pericardial adhesions may develop.

Infarction. Necrotic areas are frequent in syphilis, typical or invaded secondarily by hemorrhagic effusion. In the center there is marked degeneration of the muscle fibres.

The Plaque. The plaque of sclerosis is at first soft, then hard; represents the last stage of either of the changes mentioned; a genuine cicatrix. It may be the starting point of a cardiac aneurysm.

Diffuse lesions, myocarditis or sclerosis. We have first infiltration, then connective tissue fibres appear and the process terminates in organized connective tissue.

The Aorta. Syphilis may attack the aorta either locally or generally. The ascending portion usually suffers most. A strangulation necrosis takes place, caused by periarteritis and obliterating endarteritis of the vasa vasorum, which starves and destroys the elastic layer. If violent, the condition travels as a serpiginous ulcer; causes aneurysms and vegetative growths on the intima which may break off and form emboli.

The X-ray shows changes in the pulsations, size and contour of the aortic shadow. Frequently the shadow is cone shaped with the base on the heart. Occasionally, fusiform shadows are seen. A transverse shadow of more than 6 cm. is usually abnormal, while a heart diameter of more than 50 per cent of the chest should be considered as enlarged.

Dilatation of the aortic ring from aneurysm of the first portion of the aorta is nearly always due to syphilitic atheroma of the aortic walls, and in such a case it will be probable that there is syphilitic disease of the aortic valves. It will be impossible to say how much of the regurgitation is due to the dilatation of the ring, and how much is due to the attendant valve changes.

One usually can differentiate this condition from aortic enlargement caused by hypertensive heart disease, arteriosclerosis or an unusually high diaphragm. In hypertension, there is usually diffuse enlargement of the entire aorta. In arteriosclerosis it is tortuous rather than dilated and the aortic knob is prominent and not flattened as in syphilis. In a high diaphragm, the aorta may be slightly tortuous but the cause will be apparent.

Syphilitic heart disease occurs most often in males who have worked hard and their first symptoms are brought on by some undue muscular effort which strains the enlarged heart, or even bursts an atheromatous patch in the diseased valve.

Symptoms and Clinical Course. Aortic insufficiency is the most common valvular lesion, unaccompanied by stenosis. Thayer says that he has only seen one case of aortic stenosis which he knew to be due to syphilis; also it is known that

*Read before the 57th Annual Meeting of the Florida Medical Association, Pensacola, May 6, 7, 1930.

aortic insufficiency of rheumatic origin is nearly always accompanied by a mitral defect.

Paroxysms of dyspnea are common with syphilitic aortitis. Pain is common with syphilis and rare with endocarditis. Most show symptoms of heart failure with congestion. Normal rhythm is the rule. Another group show loss of cardiac reserve but with not enough damage to cause venous stasis; they show breathlessness on slight exertion, precordial pain, palpitation, giddiness, fatigue and undue exhaustion. A third smaller group show pain of anginal character and distribution. A small group show hypertension with albumen and casts.

The aortic arch is dilated in many cases of syphilitic aortic regurgitation, but aortic widening may be absent. Those with aortic dilatation and hypertension tend to fall into the anginal group.

Physical signs. May be those of congestive heart failure alone. Aortic insufficiency with varying degrees of murmur present, and Corrigan pulse. Aortic dilatation causes visible pulsations in the second or third interspace to the right and left of the sternum; and submanubrial dullness. A normal rhythm is usual. Auricular fibrillation may occur in a few; extra systoles are rather common.

Incidence. A careful study of fifty cases of early syphilis at the Massachusetts Hospital showed no definite clinical evidence of disease of the heart nor aorta in any case. Clinical evidence of cardio vascular disease in early syphilis is rare.

In a study by Smith and Kimborough of about fifty cases of syphilitic heart disease, the average interval in cases in which the date of the initial lesion was known was 22 years—the shortest interval was 8 years—the longest 41 years.

Thayer says that the syphilitic heart usually progresses to dissolution very quickly after leaving the latent stage, and Preble adds to this, especially with strenuous treatment.

French says that the luetic heart is uncommon at 40; is met with between 40 and 50; in many cases the heart has been passed as normal at 40, while at 45 the aortic regurgitation is extreme.

Treatment. Preble says: "Syphilis of the aorta should not receive active treatment. The purpose of treatment is to have as much scar tissue as possible, not to remove the syphilitic exudate rapidly. Prolonged use of small doses of iodide of potassium should be the plan. Active treatment too often leads to aneurysm."

Most writers deplore the indiscriminate use of intensive antiluetic therapy. In congestive failure or where the cardiac reserve is low, most agree that medication should be started in small doses and developed gradually.

CASE REPORT

P. R. D., age 53, white male, fairly well nourished, seen first in November, 1929. Very little sickness in his entire life and had raised a healthy family. Had attacks of gastritis in 1927. For some days previous to my first visit he had attacks of pain in the left abdomen radiating upward toward the heart, accompanied by the formation of gas and constipation. His appetite was erratic. Pulse 120 standing, 112 sitting, 100 recumbent. Blood pressure 160 mm. systolic, 60 mm. diastolic. Arteries only slightly thickened. Corrigan pulse marked. Impulse in the sixth interspace 10 cm. to the left of the mid-sternal line. No thrill felt. There was a marked double murmur at the base which was heard all over the precordium, the diastolic murmur being transmitted to the left axilla.

The electrocardiograph showed a marked left deviation—plus 52. A rate of 90, but no definite myocardial degeneration.

The X-ray showed the heart very much enlarged; the knob prominent and enlarged; heart 19 cm.; arch 9 cm.; media stinal shadows 11½ cm.; a heart something over 64 per cent of the chest, it being 29.5 cm. There was no evidence of passive congestion of the lungs. A G. I. Series showed no definite trouble in the stomach or intestines. A blood test showed a 4 plus Wassermann.

When this case was first seen, a diagnosis of rheumatic heart disease was made which, of course, was an error. When the X-ray and the result of the blood test were obtained and the case re-examined, that error was corrected and a diagnosis of luetic heart disease was made. This error is the main reason for reporting this case. It is true there was a rather marked systolic murmur present which at first was interpreted as a mitral murmur, but this case had been seen almost yearly by different medical men and no diagnosis of heart disease had been made. This can only be explained in the absence of any acute illness by the last diagnosis made.

He was seen in one night attack of coughing, rapid pulse, slight dyspnea. He had had a number of these attacks. His pulse was about 200. After the administration of ammonium bromide grs.

10 by mouth, repeated every 15 minutes, the pulse began to slow and in about one hour was about 90 per minute which was considered normal.

Before this was considered luetic, the patient's activity was restricted and rest hours prescribed. From the first, he showed improvement. To this was added cacodylate of soda grs. iii, intravenously three times weekly, together with biniodide of mercury ¼ grain t. i. d. after meals, later changed to iodide of potassium minims 10 t. i. d. His condition has continued to improve until he says he feels better than he has for years. His appetite is good, he has gained weight, sleeps and rests well. The murmur has decreased greatly and the pulsations of the vessels of the neck and the force of the cardiac impulse have both lessened. His color has improved and he has had no further attacks of pain.

In spite of this improvement, X-rays taken six weeks after the beginning of antiluetic treatment do not show any decided lessening of the heart and aortic shadows. Perhaps the treatment is so mild that there is not much cicatrization as yet. If Preble is right, and this is what we wish to avoid, then this mild form of treatment is correct. Certainly from a clinical standpoint he is greatly improved.

When this patient was first interviewed he denied venereal disease, but at the time of taking the blood specimen he admitted having a slight hair-cut 39 years before, which had healed without medication. He had no secondary manifestations and had raised a healthy family, without accidents of pregnancy or illness that could be attributed to syphilis.

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DISCUSSION

Dr. Herrman H. Harris, Jacksonville:

I have enjoyed this paper by Dr. Caldwell very much indeed. It is a most important subject. Just how prevalent syphilitic heart disease is, we do not know.

Would like to state some facts relative to what we have found in Jacksonville in the County Hospital there. The service is divided between Dr. Stanley Erwin and myself, and for the last five years the instances of syphilitic heart disease have been over eighty per cent. You must take into consideration, however, that ninety per cent of the patients who enter the hospital on charity service are negroes.

Just how much the myocardium may be damaged in syphilitic heart disease we are not yet quite ready to say. Up to a few years ago it was the opinion that most of the damage was on the vascular trunk or the first portion of the aorta. However, since the marvelous work done by Waltham, who found spirochetes in large numbers in the myocardium, we are inclined to the belief now that the myocardium suffers more than it would merely through involvement of the coronary orifice, which of course to some extent cuts down the blood supply to the myocardium.

My experience has been very similar to that of Dr. Caldwell regarding treatment of these cases. Most splendid results symptomatically. They do improve symptomatically, but I must admit that the pathology does not seem to show much change from treatment. I thoroughly agree with Dr. Caldwell that the treatment should be rather mild and cautious and prolonged, rather than the intensive arsphenamin treatment. In the few cases to which we have given intensive arsphenamin treatment, in the Duval County Hospital, the results have been disastrous. We now give iodides in small doses or mercury and bismuth intergluteal with some sodium cacodylate intravenously.

Syphilitic heart disease has not interested us very much from the standpoint of prophylaxis. However, we are going to be compelled in the near future to make an attempt to lower the death rate from heart disease in the same significant way we have been able to do in tuberculosis. The entering wedge will be syphilitic heart disease.

Dr. Paul White recently told me in conversation that in Vienna and Berlin last year he was informed by a few eminent cardiologists that already the death rate from syphilitic heart disease in Austria and Germany had shown a substantial reduction, due to the propoganda among general practitioners, impressing upon them the value of early and thorough treatment of syphilis, in its primary and secondary stages.

Whether we can cure syphilis or not is still a debated subject, but there seems to be little doubt that much of cardio-vascular involvement, incident to syphilitic infection, can be prevented.

Dr. Herbert Caldwell, Lake City (concluding):

I wish to thank Dr. Harris for his thoughtful discussion of this short paper.

TWO ASPECTS OF HYPERTENSION*

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PART I.—(Peripheral Resistance)

Blood pressure is dependent upon the following factors:

1. The pumping action of the heart.
2. The action of the aortic valve.
3. The elastic blood vessels.
4. The peripheral resistance.
5. The constituents and behavior of the blood.

Factor four or the peripheral resistance is the friction of physics and presents for examination two parts: component A, or the retarding influence of roughness, and component B, an electrical component producing resistance because of a charge on the colloids of the blood and the vessel wall due to the velocity of the blood.

An excellent review of the factors of blood pressure and hypertension is found in Hirschfelder:

"Dawson has shown that the mean pressure is very constant in the arterial system and that it falls slowly as the capillary system is approached. The decline of the maximal or systolic pressure is a steep curve. The blood pressure in the brachial artery of a man is less than that in the femorals; the difference may amount to 100 mm. in disease. The horizontal position obliterates the difference. Erlanger and Hooker have shown that the minimal pressure rises in the change from prone to standing."

After meals the maximal pressure rises. Exercise (Schott, Massing, Cabot, Brown), sensory stimulation (A. Berg), mental effort (Zabel) and psychic influence raise the blood pressure (Hirschfelder). Cannon and De La Paz ascribe the rise to adrenalin. In sleep, blood pressure falls (Howell, Brush and Fayerweather). In asphyxia, Konow and Stentick show curves of the rise and fall due to progressive irritation of the central nervous system. Sojourn in the tropics brings about a fall as does exercise at times.

The following diseases are associated with high blood pressure: nephritis (Reviews of Janeway and Pierce), lead poisoning, chronic hypertrophy of the heart, aortic insufficiency, conditions of increased intracranial pressure, meningitis, cerebral hemorrhage, brain tumor, uremia, Jacksonian epilepsy, idiopathic epilepsy, vascular crises, angina pectoris, Stokes Adams' syndrome, pregnancy, chronic polycythemia, cyanosis due to heart failure, and chronic hypertension or presclerosis.

*Read before the 57th Annual Meeting of the Florida Medical Association, Pensacola, May 6, 7, 1930.

The chemical abnormality of the blood is the subject of voluminous literature; presence of noncoagulable nitrogenous bodies (Erben), the prurine bodies (Crofton), faulty excretion of metabolic products by the kidney are blamed in turn. Allen ascribes it to filter failure of salts and water. Adrenalin is given a place by Cohn and pituitrin by many recent workers.

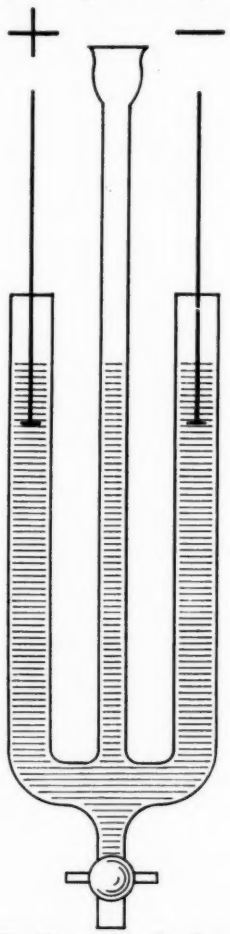

FIG. 1.—The Nernst Tube for Cataphoresis.

COMPONENT A

Microscopic roughnesses exist on the surface of bodies apparently smooth in surface texture. When such bodies are in motion in respect to each other these roughnesses act as retarding influences.

COMPONENT B (Dorn effect)

The electrical charges or colloids when in motion are of great importance in the study of the circulation. When colloids move in liquids, or pass along a membrane, an electrical charge is acquired, *i. e.*, they become either plus or minus

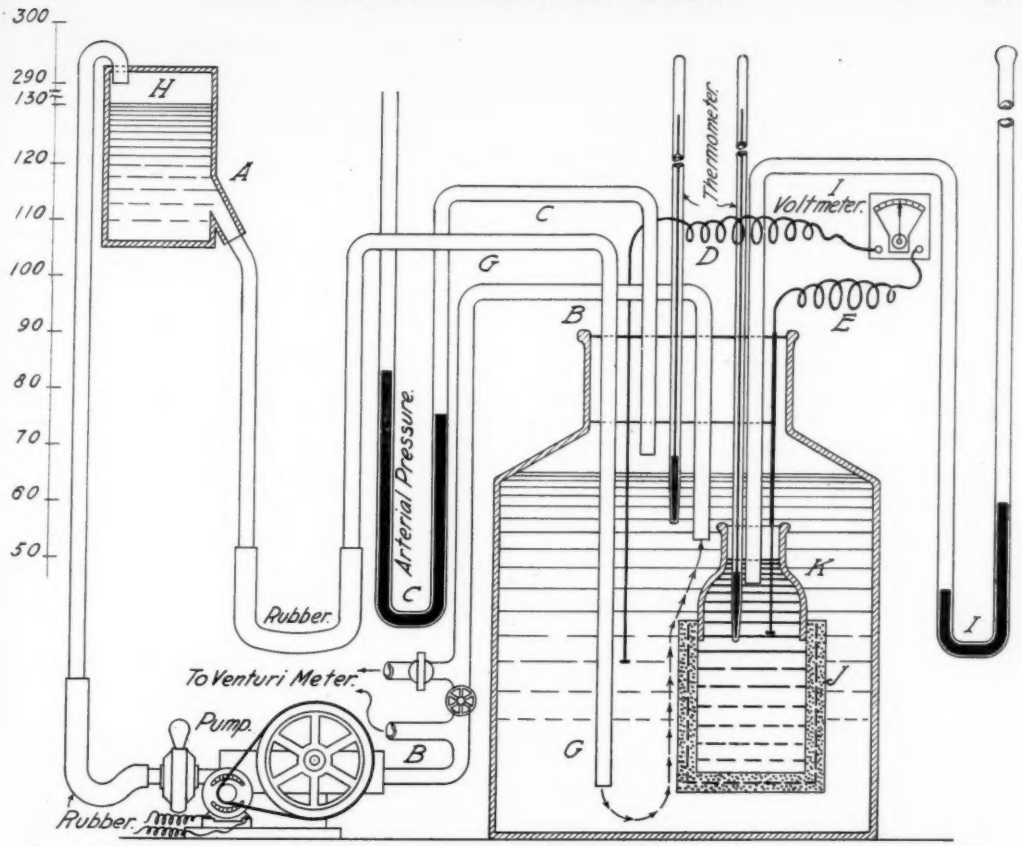

FIG. 2.—The Resistometer. (a) Laboratory set-up for a phantom circulation. (b) Manometer represents hydrostatic or blood pressure. (d-e) Electric circuit. (j-k) Capsule. (i) Osmotic pressure. Thermometers for thermodynamic experiments.

in respect to the membrane in question. Whenever a plus or minus charge exists in nature, there is a strain on the part of such charged bodies to approach each other in order to reunite such charges as do two pith balls of opposite signs. When such strain retards the flow of the blood in the arterial system, it becomes of interest in the study of hypertension.

Means at hand to arrive at a value for estimation of this important factor is made possible by recent studies of electric charges on colloids. The study of osmosis was made possible by the discovery of Traube (1867) of how to construct artificial membranes permeable to water but not to solutions of certain dissolved substances.

Pfeffer (1877) made further examinations and advances in the technique of this phase of biological chemistry. A porous pot 6 to 8 cm. high and 2 to 3 cm. in diameter, hereafter to be known as the capsule, is sealed by means of sealing wax to a glass tube. If filled with the solution of a salt, such as potassium ferrocyanide, and then the outside of the pot be soaked in copper sulphate or ferric chloride, an insoluble colloid membrane is formed in the meshes of the capsule. This membrane is diagrammatically indicated by a line in Fig. 2.

A review of the preparation of various colloid membranes has been published by Boutoris. If a solution of sugar be placed inside the capsule, and capsule and contents be immersed in pure water, a current of water will enter the capsule at a pressure shown by the manometric tube (I) of Fig. 2. Van't Hoff computed this movement and found it to agree with Boyle's law of gas pressures.

In 1885, Hittdorf noted a transfer of the salt concentration in a fluid by the electric current. Sir Oliver Lodge, Whetham and Nernst used colored solutions, later thickened with gelatine to make visible and fix the bodily transfer of such salts. This process is known as cataphoresis.

If an electrode is placed in the earthenware pot and one in the surrounding fluid a current is noted on the voltmeter. This electric value is known as the Dorn effect. (Freundlich, Kruyt, Freundlich and Ronn.)

If the voltmeter be replaced by a battery, a streaming of particles takes place toward the electrode having a charge of the same sign as the surface charge on the membrane. The behavior of the liquids in motion can be observed by colored solutions and the manometers of Fig. 2. This process is known as electroendosmosis. If electrodes are connected to a voltmeter, as shown, and pressure is applied on the surrounding liquid (hydrostatic pressure), a potential can be read off on the dial of the voltmeter. This is the streaming potential.

The resistometer is a phantom circulation arranged to show all these factors both at rest and when in circulation. The individual colloids and salts of the circulating medium can be varied in concentration. The colloid membrane can be varied to analyze its function as can be the contents of the capsule. If an electric battery impress its potential and cause a streaming toward the capsule, this capsule then can be likened to the kidney or other excretory organ or take on the function of tissue in respect to capillary. The effect of this excretion can be read off on the manometer. A Venturi meter registers the velocity of the flow when desired. Its theory is discussed in another section. The influence of chemical bodies injected directly in the blood stream, their mechanical roughness or smoothness, and their electric fitness can be ascertained. Osmosis can be studied under atmospheric, hydrostatic and electric pressure. Substances can be dialized from the capsule to the circulation and the physical effect noted on velocity and pressure. Secretion can be studied from its chemico-physical side.

The Dorn effect, produced by allowing powdered quartz to fall through two meters of toluol by the force of gravity alone, causes a potential of 80 volts. This amount shows the magnitude of the charges on the colloids of systems at rest. In the circulation, these colloids flow at a great velocity or speed and such strains are multiplied rapidly. When a vessel and its emptying system are coated with a fatty or oily substance this atomic attraction is lessened, and its retarding influence (the peripheral resistance) is also diminished.

The Venturi meter (Fig. 3) is an instrument invented by an Italian engineer to measure the velocity of a stream. The upright tubes (b, c, a) Fig. 3, measure the atmospheric pressure which is shown diagrammatically by the shaded portion (a) and the white portion between A and O is supposedly the water pressure.

The successive diminutions of the bore of the channel at (e) increase the peripheral resistance. When the channel is successively narrowed, a suction is created by the flow of the water in the portion proximal and distal to this constriction. This suction or vacuum has an attraction for the

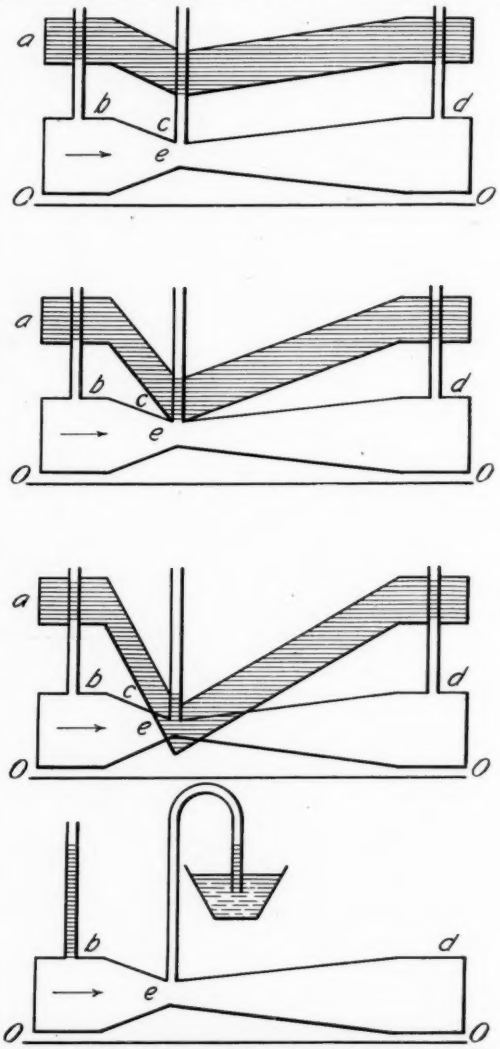

FIG. 3.—The Venturi Tube (Trautwine). Successive narrowing of the tube at (e) increases the attraction of the circulating fluid. This attraction draws down the atmosphere obliterating the water pressure which is shown in the standard tube (c) at this point. In the fourth diagram (a) has disappeared altogether, having been converted into a suction or vacuum.

atmosphere (shown diagrammatically by the bend in a) which is now less than the normal atmospheric pressure. As the constriction is increased, mercury to a certain height is sucked up by the tube, the height of the column of mercury being proportional to the original velocity head. It is then of use as a water meter. However, this

theory has never satisfactorily explained its action. This discrepancy physicists have called the "paradox of the Venturi meter." The process is obviously one of electric attraction caused by flowing matter.

These diagrams are brought to the notice of the clinician, however, only in order to demonstrate the fact that at high velocity a suction or vacuum is present uniformly on all of the circumference wall and not limited to the vertical pipes as in the diagrams. This vacuum is a tremendous safety factor and clinical measures should be directed towards is preservation and increase.

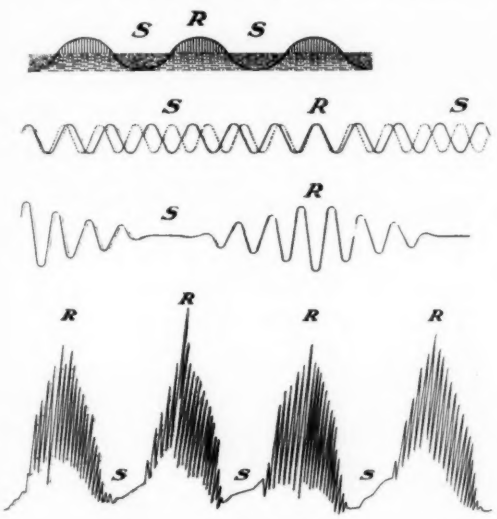

FIG. 4.
Curve (a). The water wave. Hills, R; Valleys S.
Curve (b). Interference of two waves. R and S shown in the process of change.
Curve (c). The "bat wing" curve adapted from Milliken and Gale.
Curve (d). Curve of Cheyne Stokes' respiration adapted from Brubaker.

CONCLUSION

The colloids of the blood stream then exhibit electric phenomena of attraction which should be studied from the standpoint of the therapeutist as well as the physiologist. The introduction of fats and oils through the intestinal tract and thoracic duct offers a fascinating vista in the control of both components A and B. The production of the blood potential is in agreement with the theory of the electrical nature of matter in motion (Einstein). The dictum of the removal of the air in a Venturi tube or a vacuum pump by microscopic roughness of the circulating fluids should be replaced by the more rational one of an electric attraction. Increasing the velocity of the blood under proper condition is a means of converting pressure against the vessel wall into a suction for its protection. Capillary attraction and endosmosis are kindred and related electric functions.

Some success has been attained in the treatment of cases of hypertension by milk sensitized with creams of different strengths (butter fats). A small series of cases shows improvement in some, and failure of the method in others. In general the work done to date would show that high blood pressure in individuals over 40 years is almost uniformly benefited, while that of younger individuals is not favorably influenced. In such cases the writer has suspected thyroid involvement when kidney complications could not be demonstrated. (This surmise was confirmed in one case at operation by Dr. Crile.) Such failures should stimulate the research however for the following reasons:

1. It would seem that the nature of the dielectric and lubricant influences both the quantity and the sign of the electric potential.

2. Instruments have been developed for demonstration and the detection of these electrical quantities and formulas for their proper evaluation.

3. Research should be stimulated to investigate and return to the clinician the lubricant necessary for the proper control of the electrical factor in peripheral resistance (friction), and the technique of its administration.

PART II.—Cheyne Stokes Respiration and Other Interference (Beat) Phenomena in the Hypertension.

When one solid body moves on another most of its particles retain (practically) their original relative places. In fluids, on the other hand, waves are produced, the contours of which have long been the target of intensive research (Fig. A). A wave form presents for examination a hill (R) for roughness of the wave and (S) for the smoothness of the valley or plain. This smoothness could also be called a flatness. When one wave passes through another the phenomenon on interference becomes apparent (beats). That is to say, the rhythmical alternating roughness and smoothness of the wave contour is altered so that the valley of wave one now contains the hill of the second component. When this occurs, the contour of the surface will remain smooth while whenever the hills of the two waves coincide in time the "roughness" will be exaggerated. The resultant tracing of the contour is best named the "bat-wing curve."

These alternating smoothnesses and roughnesses obey the following law: The number of beats (smooth portions) per period of time is equal to the *difference* in wave *frequencies* of each component provided their respective energies be equal.

The arterial blood stream has two components of apparently equal intensity, a respiratory vari-

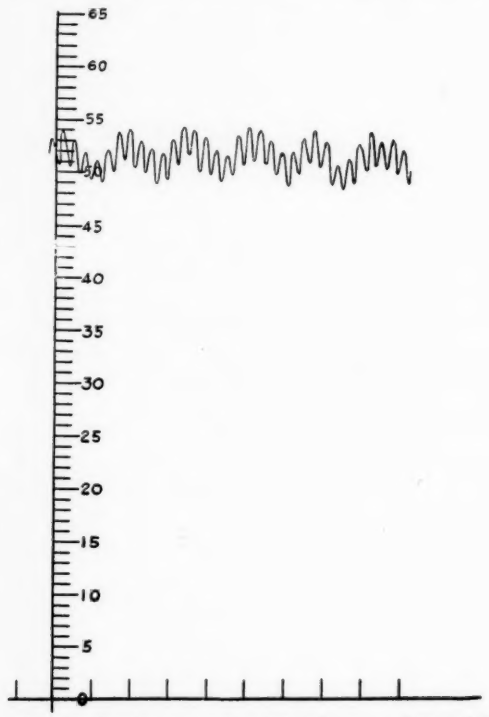

FIG. 5.—Respiratory and cardiac elements of Brachial Pulse (after Brubaker Physiology).

ation of 18 to the minute and a cardiac component of 72 to the minute. When these two components function harmoniously, 18 to 72 being a simple one to four ratio, no beat phenomena are present. When peripheral resistance (as will be shown) is increased, or other disturbances are present, this ratio is disturbed (out of tune) and exaggerated smoothnesses and roughnesses pass through the respiratory center, changing its rythmic operation.

The resulting respiratory curve, that of Cheyne Stokes' breathing, shows the effect of the batwing curve passing through the respiratory center. Just as the respiratory center corresponds to a chemical difference in the carbon dioxide-oxygen ratio so does this center show a pause when a beat (S) of the pulse respiratory wave passes through it. As each succeeding wave of the batwing curve increases in extent, the respiratory effort is greater. It produces a maximum at R and declines in a like manner.

WAVE CONTOURS

The diagrammatical cross section of waves in a channel is shown in the illustration as is also the lateral projection of one. The cross section shows how waves of various shapes (due to pe-

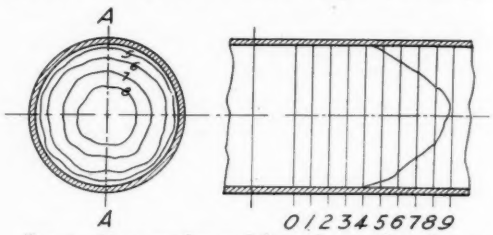

FIG. 6.—Cross section and lateral extension of wave contours in a closed channel. Like numbers in the diagram show contours at a like period of time. (After Trautwine.)

ripheral resistance) vary as succeeding depths of the channel are encountered. The lateral projection shows the deformation of the wave at successive periods of time (due to peripheral resistance).

THE SPHYGMANOMETER CUFF

Krotkow (1905) first drew attention to the ausculatory method of blood pressure determination. A water hammer is the sound produced when liquid is smartly slapped.

Consider a boat stranded on the bank of a stream, the waves slap at its sides. If the boat be pushed to the middle of the stream, this slapping is no longer heard. It is replaced by a soft, pleasant gurgle, which gives way to silence as the boat rises and falls with the ground swell of the channel. In the same way the weight of the column of mercury at first grounds the air bag and the pulse is obliterated. The slowly diminishing column of mercury allows the buoyancy of the air cushion to come into play. Its body is buoyed up by the liquid with a force equal to the weight and pressure of the blood so displaced and in this instance can be read off in millimeters of mercury. The extent of the oscillation and the absence of the water hammer announces its arrival in mid-channel.

As the pressure of the sphygmanometer cuff is increased, if the number of beats or interferences heard in the stethoscope per minute be platted against the height of the column of mercury at 10 mm. intervals, an interesting curve is produced. Certain relations to pulse and respiratory rates become evident, if these be counted before and after the taking of the pressure counts. These ratios vary in youth, in age, and sex has an influence as

has the pathological condition of the circulation.

At the present writing no definite conclusion can be drawn as to its certain significance. The ratio of 1 to 4 or 18 to 72 is not materially disturbed in normal cases, except just before the systolic blood pressure is read off. In severe cases of hypertension, interference between the 18-72 ratio occupies a broad band showing marked tendency for the formation of abnormal rhythm, whenever the arterial wall is compressed.

CONCLUSION

1. Cheyne Stokes' breathing receives adequate explanation in the beat phenomenon of respiratory and pulse waves.

2. Careful count of the beats per minute, per ten mm. of mercury, will aid investigation of functions of the respiratory and circulatory centers in hypertension.

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SPINY AMARANTH

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Pensacola.

A new weed, at least new to us in this section of Florida, has been revealed through searching for the causal factor of an apparent pollen sensitization case. This weed, spiny amaranth, botanically known as *amaranthus spinosus*, is reported to be a weed of great hay fever potentialities because it is a wind pollinated plant that yields large quantities of pollen.

Spiny amaranth is a late summer plant and a troublesome one in the southern states, but not in the north. It is sometimes called "prickly careless weed," and otherwise called "soldier weed" but is usually referred to as spiny amaranth. It pollinates from June throughout September and therefore must be a causative factor in Florida and neighboring States with any patient who reacts markedly to it. It is wild, being no more cultivated than ragweed or any other trouble creating weed.

CASE REPORT

B. M., a male 23 years of age, consulted for a profuse nasal discharge accompanied by cough which was non-productive. The patient stated that he had this every year but that this year it seemed to be aggravated. The cough was worse in the morning with nasal secretions which caused much blowing of the nose.

Examination revealed a catarrhal rhinitis with a tracheo-bronchitis (confirmed by chest examination by family physician.) Local treatment to the nose was instituted and because of the seasonal occurrence of the disturbance, cutaneous pollen tests were advised. This was July 18th, 1930. At this time, the symptoms had been present for about two weeks.

The patient was referred to Dr. H. L. Bryans who, in using his diagnostic set, included an unknown in the set by the name of spiny amaranth. Much to his surprise, this was the only pollen to which the patient was sensitive. It gave a very marked reaction.

A treatment set was ordered at once and the patient was again tested with the solution of 1-10,000 dilution. Unexpectedly, a wheal promptly formed with one drop of this solution at this dilution.

The local treatments to the nose, consisting of tamponades and shrinking sprays, gave very slight relief.

On August 15th the co-seasonal schedule of treatment was instituted. After the third injection of the 1-10,000 dilution, the patient felt relieved. The dilutions of 1-5,000 were given followed by 1-1,000 and 1-500. Only once did the patient complain of feeling any reaction from the series. They were given daily up to the 1-1,000 dilution and then finished with every other day injections, and when the 1-1,000 was first given, he complained of stuffiness and itching in the nose. When given on alternate days this did not recur.

The patient is free from any symptoms now, and has been so since the first week of treatment. He has had no change of environment nor has the time of his trouble extended as long as in previous years.

He has been retested cutaneously and found to be desensitized. The preseasonal treatment has been advised for the ensuing year.

CONCLUSION

Quite by accident has a pollen sensitization to a weed quite unknown to us been uncovered. It is reported in the hope that some other obscure cases may be tested with this pollen which can now be definitely added to the hay-fever list for the southern states.

THE DIAGNOSTIC VALUE OF THE SIGMOIDOSCOPE*

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The symptoms that usually take the patient to the proctologist are bleeding, pain, diarrhea, constipation, foreign bodies and discharges, but the patient is more likely to complain of having piles. As Buie has stated, when a patient complains of having piles, he may be suffering of any disease, from constipation to cancer. Too many physicians accept the self-diagnosis of piles and give prescriptions for ointments or suppositories and, consequently, many unfortunate results follow which could have been avoided by careful examination. In the sigmoidoscope we have an instrument with which a direct view can be had of the lower 25 or 30 centimeters of the alimentary tract. Therefore, its use should be encouraged to complete every examination of patients complaining of ano-rectal and colon disease. While the sigmoidoscope gives no information beyond its range, it will rule out definitely those diseases of the rectum and lower sigmoid that usually are difficult to diagnose with the X-ray.

I believe it is particularly timely to urge more thorough rectal examinations, because there are so many unethical equipment houses offering half-baked courses in proctology, in addition to the thousands of pile remedies on the market, all offering to the pile sufferer a cure or relief. As a result, the average person suffering with what he believes to be hemorrhoids, will probably treat himself for months and years before he consults a physician. When he does so, he may or may not receive a thorough proctoscopic examination. In case his physician is surgically inclined, he may without further investigation treat the piles by injection or surgery, while if a thorough examination had been made, a co-existing cancer might have been found. In the Mayo Clinic series of cancer of the rectum, a large percentage had been confused with piles, and 10% of them had been operated on for this disease after the onset of malignancy. Buie found, in a series of over 2,000 cases of cancer of the rectum, that 18% had been treated or operated on for hemorrhoids.

Of all symptoms that cause the patient to seek medical advice, bleeding is probably the outstanding sign-post of organic disease of the rectum and colon. Bleeding suggests ulcerations. Ulceration anywhere within the gastro-intestinal tract will show blood in the stools. It may be slight or profuse. It occurs in hemorrhoids, chronic ulcerative colitis, tuberculous colitis, amebic dysentery, carcinoma, benign tumors, polyposis, diverticulitis and stricture. The most common sign of cancer of the rectum is bleeding. Of one series, 88% complained of bleeding. However, bleeding is a sign of ulceration and indicates a breaking down of the growth. Since early diagnosis is imperative, the ideal can only be reached when cancer may be discovered before bleeding takes place. It is said that the average time of existence of cancer before patient seeks advice, is over 11½ months. During this period, he has been treating himself with various ointments and suppositories. When he does seek medical advice, it is usually too late. Already an inoperable condition exists.

The cause of diarrhea may be recognized at once with the sigmoidoscope. Frequently, an impaction of feces in the sigmoid will cause enough irritation of the bowel to bring on a diarrhea. Rectal constipation often causes an increase in frequency of stools. In the different types of colitis, not only will the proctoscope reveal the true condition, but it may be used for treating directly the ulcerations.

A discharge without diarrhea that soils the linen is a common symptom of ano-rectal disorders, the most common of which is fistula in ano. Cryptitis, chancre, chancroid and carcinoma may cause a discharge. The sigmoidoscope will assist more than any other available means to reveal its cause. Frequently, conditions in this region cause so much inflammatory reaction that because of the sensitiveness of this area, the physician finds it difficult to make a complete examination. The patient will hardly allow the medical attendant to touch him, because of the pain. In such cases, I do not hesitate to anesthetize the area with caudal anesthesia. This is a safe procedure and can be carried out readily in the office. It will only take a few moments longer, and as a result, a thorough examination can be made with complete relaxation of the parts.

Pain may co-exist with either bleeding or diarrhea, or both. If the pain is cramp-like and of a grinding character along the line of the colon, a chronic colitis should be thought of while if the pain is localized, cancer is suggested. As Judson has pointed out, there is little sensitiveness to pain except within one inch of the anal opening, which, when present justifies the physician's attention to thrombotic piles, fissures, fistula in ano, ulcers and abscesses of this region.

*Read before the 4th Annual Meeting of the Florida East Coast Medical Association, Melbourne, Oct. 2, 3, 1930.

It is hardly necessary to call attention to the ease with which foreign bodies may be detected with the aid of the sigmoidoscope.

The sigmoidoscopic examination is usually made with the patient in the knee-chest position, or on a table especially designed for the purpose. After inspecting the anus and the surrounding area the index finger, well lubricated, is inserted through the anus and lower tract. This procedure not only gives to the examiner valuable information, but dilates the sphincter and lubricates the canal. After withdrawing the finger, the sigmoidoscope properly lubricated is inserted. At the same time the patient is asked to cooperate by bearing down, thus relaxing the sphincters. After the instrument passes the anal canal, it is depressed and passed on to mid-sacrum, when the obturator is removed. Then with the aid of the light, the instrument is passed on to its full length. When the obturator is removed and the outer air enters the rectum, the valves of Houston are brought into view. At the promotory of the sacrum, more or less resistance to the onward progress of the instrument may be encountered because of a fold of mucous membrane situated at the junction of the rectum and colon. Caution must be exercised in passing the instrument, particularly in inflammatory conditions. Perforation has been reported several times, and frequently because of too much air inflation.

The condition of the mucous membrane of the pelvic colon should be carefully observed. The normal mucous membrane will not be traumatized with the instrument or by the use of the cotton swab. Normally, the portion of the colon at the sigmoid flexure is freely movable, and if it appears fixed at this point, the presence of adhesions should be considered. The valves of Houston are occasionally found greatly hypertrophied, and may explain an obstructive type of constipation.

In ulcerative diseases of the colon and rectum, the granular bleeding points following the use of the cotton swab are characteristic. In chronic ulcerative colitis and amebic dysentery, the sigmoidoscope will not only determine the differential diagnosis by the characteristic type of lesion, but smears may be taken for microscopic examination which will reveal either the entomoeba hystolytica or the diplococcus of Bargon.

In cases of cancer of the rectum, the sigmoidoscopic examination should alone insure a correct diagnosis in every case. The lesion of carcinoma is at once recognized. It is usually a single proliferating mass. If it has broken down, we will have an excavating type of ulcer which is necrotic and bleeding. In any case, the surrounding mucous membrane is normal and uninvolved.

In polypoid growths, there are no necroses or bleeding. They may ulcerate at the tip, but should not be confused with other lesions. If they are limited to the field of the proctoscope, they may be readily fulgurated. Biopsy will clear up any question of diagnosis, and can be taken while the sigmoidoscope is in position.

One might go on indefinitely describing the different pictures that varied pathology will give during a routine proctoscopic examination. However, it is not the purpose of this paper to go further into the diseases of the rectum and colon than is necessary to emphasize the diagnostic value of the sigmoidoscope.

Before closing, however, I want to call attention to the large number of disorders, the etiology of which is found in some distant focus of infection. Frequently, the colon and rectum will be found to harbor the infection. Pennington has called attention to the danger of hemorrhoids as a focus of infection in gastro-intestinal diseases. Bargon reported last year a series of 693 cases of chronic ulcerative colitis in which significant complications and lesions closely associated with the disease occurred as sequelae to or during the course of the infection. There were sixty-nine cases of polyposis of the colon, fifty-nine cases of stricture of the rectum or colon, thirty cases of arthritis, twenty-six cases of perirectal abscess, seventeen cases of cutaneous lesions, eight cases of nephrosis, or nephritis, seven cases of endocarditis, seven cases of splenomegaly, eighteen cases of perforation of the colon, fifteen cases of malignant disease, five cases of ocular disease, three cases of fatal hemorrhage, two cases of renal calculi, and one case of mesenteric thrombosis, and one case of tetany. The skin lesions included erythema nodosum, erythema induratum, chronic eczema, vegetative dermatitis, hemorrhagic pupura, irregular ulcers of the leg, pemphigus, etc. In the arthritic cases, various types were noted. In one type it was observed that each exacerbation of colitis was followed by a recurrence of the arthritis and with improvement of the colitis there was definite relief of the arthritis. While perirectal abscess was an infrequent complication, its presence has a strong clinical significance. A pure culture of the diplostreptococcus was usually recovered from the abscesses. Conservative treatment is imperative in this type of perirectal abscess because, as Bargon stresses, if the usual radical incision and drainage is carried out, there may result unfortunate perianal spread-

ing, and frequently anal deformity. Of the ocular complications, while only five cases were observed, there was no doubt as to the concurrent infection. In all five cases, they occurred in the presence of one or more other complications such as perirectal abscess, endocarditis and arthritis. In the entire series, all the cases were treated by vaccines made from the diplostreptococcus of Bargon isolated from lesions in the rectum. The vaccine gave definite relief or cures in all but seventeen cases, and along with improvement of the colitis, there was an associated improvement of most of the complications.

VITAMINS, AND THEIR RELATION TO THE GASTRO-INTESTINAL TRACT*

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This paper is presented with the hope of creating a new and lively interest in one of the subjects of greatest concern to those engaged in the science of health. To this end, I have reviewed the subject as presented in current medical literature, and have supplemented the same with a classification of certain pathological findings based on one thousand of my own clinical cases.

Until a few years ago, it was thought that all the needs of the body had been well provided for, if it received food containing the proper amounts of carbohydrates, fats, proteins, mineral salts, and water sufficient for growth, heat, and energy.

Protein was known to be essential for growth, and replacing loss by wear and tear. One kind of protein was considered as good as another. Carbohydrates and fats were regarded solely as energy and heat producers. The need for mineral salts was recognized—lime and phosphorus for bone and teeth, iron for hemoglobin.

At a later period, caloric values were extensively studied and became an exact science. In certain schools of physiology, it was given paramount consideration. Many authorities are still blinded by this obsession for calories.

Modern analysis of biological facts, verified by animal experimentations, has made it possible to differentiate five accessory food factors or vitamins, each possessing definite physiological properties. The study of vitamins has revolutionized the field of dietetics in their relation to disease.

VITAMIN A

A deficiency of vitamin A in the diet predisposes young animals to infection and diseases, particularly respiratory diseases. Philip Norman has demonstrated that dogs, rabbits, rats, and poultry cease to grow, lose weight, and become apathetic to surroundings when fed for a time upon a diet constantly deficient in vitamin A. They will develop a condition known as ophthalmia or xerophthalmia, finally becoming totally blind. This condition has been produced many times in animals by restricting vitamin A, and either cured or relieved by the addition of food containing vitamin A. Xerophthalmia is regarded as a true example of vitamin A deficiency. My own experimentation on rats enables me to concur with Norman in these findings.

Norman and others further state that people are affected with this same disease. Night blindness, observed among Japanese coolies and Eskimos, is cured by giving cod liver oil rich in vitamin A. During and following the World War many soldiers and children who were fed foods deficient in vitamin A had an eye infection that cleared up at once when fed foods rich in Vitamin A.

Vitamin A is fat soluble and, therefore, may be found associated with certain animal fats. The liver of the cod fish is the most productive source; however, it is found in the livers of shark, menhaden, skate, and pollock. It is also found in cheese, butter fats, cream, whole milk, and egg yolk. The vegetables of highest content of vitamin A are carrots, spinach, escarole, and young clover.

Most animals have the capacity of storing vitamin A in some of their organs, as kidneys, heart, and liver. From certain available evidence it would seem that the vitamin was necessary for the correct function of the organ.

When the dietary of persons suffering from diseases of these organs is carefully analyzed, it is found that this dietary has been very deficient in vitamin A and also in other vitamins.

Philip Norman makes special mention of the fact that cows fed upon green pastures secrete milk richer in vitamin A than stall-fed cows. Plimmer concurs in this opinion.

Animals do not have the power of synthesizing (making) vitamins, but they obtain their vitamins directly from the green foods or vegetable matter that they eat.

Mellanby and Green have treated and cured, by giving vitamin A in concentrated form, many cases of puerperal septicemia from whose blood hemolytic streptococci were grown.

Vitamin A is believed to exert a positive effect in building up resistance to disease, especially of the eyes, kidneys, and lungs. It is also necessary for proper reproduction, lactation and growth.

*Read before the Hillsboro County Medical Society, February 18, 1930.

Foods not supplying vitamins are fats, such as: bacon, lard, vegetable oils, and margarine (made entirely from vegetable fats). Other foods not supplying vitamins are carbohydrates, such as: white bolted wheat flour, polished rice, bolted corn meal, sago, pearl barley, tapioca, custard powder, and syrup. Most lean meats are relatively poor in vitamins, supplying them in varying amounts.

Foods lose much of their vitamin A content through oxidation. The fats become rancid, and the vegetables lose their vitamins (especially vitamin A) in the process of home cooking, where the heating is done in the presence of oxygen. Commercially canned foods retain most of their vitamins, because air (or oxygen) is excluded in the canning process. Storage greatly lessens the amount of vitamins in raw fruits and vegetables, while properly canned goods retain their vitamins for a long period of time.

VITAMIN B

Water soluble vitamin B, in contradistinction to vitamin A, is never associated with fats or oils of either vegetable or animal origin. This vitamin is the most widely distributed of all the vitamins, and is soluble in either water or alcohol. Its absence in the diet causes beriberi and probably pellagra in man and polyneuritis in poultry. A deficiency of vitamin B produces a marked loss of appetite or a depraved appetite, a disturbance of the growth rate, loss of weight, lack of vigor, anemia, constipation, colitis, and appendicitis. It may also cause serious functional disturbance of the secretory, motor, protective, and assimilative functions of the intestinal tract, which may end fatally. Persons who suffer from mucous colitis have usually limited their diet to milk, white cereals, polished rice, over-cooked vegetables, butter, and large quantities of sugar—a diet notably deficient in vitamin B, iodine, calcium, and sugar.

An analysis of the habits of the average constipated individual shows little or no roughage and a vitamin B deficiency. Yeast is of great value in treating this disease, because it is high in vitamin B.

Vitamin B is found in all green plant tissues, roots, tomatoes, tubers, fruits, brewer's yeast, nuts, and in cereals made from whole crushed grains and seeds. It is found in meats, especially liver, heart and kidney tissues. The flesh of chicken, turkey, duck and guinea fowl is deficient in this vitamin.

We wonder how anyone could suffer from vitamin B deficiency when it is so commonly found in foods in their natural state, but it is a fact that most people do. When we consider that 2/3 of the nation's food consists of bolted flour, polished cereal, white meal, and highly refined sugar, we then see how difficult it is to compensate for this loss of vitamin B in the remaining 1/3 of the diet. Few foods contain enough vitamin B to balance the deficiency in polished cereals alone.

The type of wrong diet most common among the rich shows an excess of carbohydrates, protein, fat, and vitamin A. In the diet common among the poorer classes, potatoes are practically the only source of vitamins B and C. Their food consists largely of white bread, bacon, fish, and sugar. This diet has an excess of carbohydrates, and a shortage of vitamins. Both diets are constipating and lower resistance to such infections as tuberculosis, influenza, and pneumonia. Plimmer believes they are probably cancer producing. The preponderance of carbohydrates unbalanced by vitamin B is a fault common with both rich and poor. Plimmer and Rosedale have shown in their experiments that not only the carbohydrates must be balanced by vitamin B, but also the protein and fat of the diet must each be balanced by vitamin B. Plimmer and Rosedale estimate that five to ten per cent of the diet should be vitamin B.

Birds that have neuritis are promptly relieved by feeding brewer's yeast. Bran and vegetables that carry a high vitamin B content are also valuable because they carry roughage for the bowels.

Macy and her co-workers have demonstrated that most American nursing mothers on an average diet produce a milk exceedingly low in vitamin B, though adequate in other vitamins and sufficient in quantity. It is, therefore, of greatest importance that food rich in vitamin B should be eaten by all nursing mothers, or that vitamin B should be supplied directly to all nursing babies at the earliest age. Probably the best form of vitamin B to give babies is fresh brewer's yeast or wheat germ sugar, known as vitavose. Wheat germ sugar is more palatable, more conveniently used, and is more available than yeast.

The prenatal development of the child is greatly influenced by diet; therefore, it is essential that the mother eat foods containing enough vitamins to insure the proper development of the child, and the preservation of her own health.

Vitamin B contains two factors: the one, the pellagra-preventing factor, is not easily destroyed by heat; the other, the anti-neuritic factor, which stimulates the appetite, is readily destroyed by heat. Morris Fishbein states that vitamin B is destroyed entirely by heat at high temperature (115° C. to 120° C.) Therefore, vegetables

should be steamed or cooked at a low boiling point. This vitamin is also washed away in the water in which vegetables are cooked.

The anti-pellagric factor of vitamin B complex is now known as vitamin G. It will probably be changed later to vitamin F.

VITAMIN C

Vitamin C is commonly known as the anti-scorbutic vitamin, although its usefulness covers a much larger field than is usually assumed.

This vitamin is necessary for maintaining normal health. We lead a hand-to-mouth existence in regard to vitamin C, for we cannot store it for tomorrow's needs. A shortage of it is quickly felt and made known by such symptoms as lack of stamina, loss of vigor, general irritability, lowered vitality, slow healing of wounds, sallow and muddy complexions, and fleeting pains, which are sometimes mistaken for rheumatism in joints and limbs.

Vitamin C promotes normal growth and development of teeth and bone, protects the body against infection, and prevents and cures scurvy. Probably many forms of gastro-intestinal disorders are unrecognized or undeveloped types of scurvy. Pyorrhea and gastro-intestinal ulcerations are usually observed in people who eat but few foods containing this vitamin; or if they do eat them, the vitamin is usually impaired or destroyed by improper cooking methods.

The best sources of vitamin C are the following: cabbage, lettuce, oranges, grapefruit, lemons, strawberries, tomatoes, spinach, green beans, turnips, rutabagas, and green peas. In a general way, raw fruits, raw Irish potatoes, roots and tubers, and green leafy vegetables contain this vitamin. Milk may or may not contain it, depending upon the provender of the cow.

Vitamin C is the most easily destroyed of all the vitamins. The anti-scorbutic properties of fruit and vegetables are lost by heating, drying, and oxidation, such as occurs in ordinary and commercial processes. When foods are cooked away from the air, as is the case in cold pack methods of canning, or when the food is acid as in fruits and tomatoes, the ill effects of heat on vitamin C seem to be greatly reduced. The quantities in cabbage and potatoes are diminished by boiling twenty minutes, and altogether lost by long slow stewing. Heating twice is also totally destructive, as in boiling of already pasteurized milk. Vitamin C is quickly destroyed by alkali, as in cooking vegetables with soda to preserve their green color. To make assurance of getting vitamin C doubly sure, however, it has become a routine practice to feed expectant mothers some raw vegetables or fruits daily, and to include tomato juice or orange juice in the diet of babies whether bottle or breast fed, and to urge everyone to increase the use in the diet of those fruits and vegetables which may be eaten raw.

VITAMIN D

Fat soluble vitamin D is the anti-rachitic principle. It was isolated from vitamin A, which was formerly considered to be anti-rachitic. Calcium and phosphorus metabolism seems to be controlled by this vitamin.

Rickets can be produced experimentally in animals by depriving them of either calcium, phosphorus, or vitamin D. This is a common disease among men, animals, and poultry.

Rickets is one of the most common nutritional diseases in the temperate zone. Active rickets is usually associated with the early years of life. However, it seems that the older children and adults are not immune to the disorders that result from a faulty use of calcium and phosphorus, which may be caused by a lack of vitamin D. Vitamin D is believed, by many investigators, to be of value in raising the resistance to disease. This may be due to the fact that vitamins A and D are often associated together in the same foods. However, vitamin D is essential for the development of strong, well-shaped bones and teeth and for normal health. While vitamin D cannot take the place of any building material, such as phosphorus and calcium, it should be emphasized that it controls the metabolism of phosphorus and calcium that would be useless without it. Vitamin D may be introduced into the body by the use of foods rich in it, and by producing it in the body through the action of light which activates body tissue. This is the only vitamin, about which anything is known at present, that the body itself can produce. The theory is that the action of ultra violet rays of the sun on the bare skin causes it to produce vitamin D. Vitamin D substance is then supposed to be carried to the tissues to control the use of phosphorus and calcium. Violet rays may be produced artificially, and used to prevent and cure rickets in children, and to invigorate adults.

Expectant and nursing mothers need a diet rich in vitamin D, but this is not enough—they should stay in the direct sunlight a part of each day. A child's first teeth are formed even to the enamel, and some of its second teeth are enameled, before it is born.

Rose and Henry state that when children and adults are out in the sun several hours of each day,

and use plenty of milk and eggs from animals that spend a part of each day in the sunlight, and use green vegetables, and some cod liver oil, they should receive an abundance of vitamin D, and should be able to store some for emergencies.

Anderson states, that in many cities, it is estimated that as high as ninety per cent of the infant and child population present some evidence of abnormal conditions of the bones and teeth. These conditions are the direct results of a deficiency of vitamin D, either in the prenatal diet or in the diet of the infant.

VITAMIN E

Vitamin E is known as the anti-sterility vitamin, since sterility results from its absence in the diet.

It is claimed by Simonds, Beckner, and McCallum that vitamin E has a regulative action over iron, similar to the action which vitamin D has over calcium and phosphorus. The fact seems to be fairly well established that vitamin E and iron are both needed for iron utilization, and that sterility, which results from lack of vitamin E, may possibly represent a crisis in iron utilization. This being the case, it is important to include vitamin E in the dietary of expectant and nursing mothers, children, and persons suffering with anemia.

It has been demonstrated that ferrous sulphate is harmful to rats and equally harmful to man. The rancidity of unsaturated animal fats is hastened by the catalytic action of ferrous compounds, tending to destroy vitamins A and E. Ferric citrate is much superior to the ferrous compounds as a source of iron.

The embryo of seeds and leaves is known to be rich in vitamin E. The food richest in vitamin E is wheat germ oil. Vitamin E is also contained in varying quantities in meat, lettuce, milk, whole wheat, wheat germ, dried alfalfa, and rolled oats.

Liver fats contain vitamin E, and liver contains much iron. The great value of liver and kidney in pernicious anemia, and the spectacular results being gotten from their use are unquestionably due to the presence of vitamin E and iron.

Several investigators have attributed pernicious anemia to a lack of vitamin A. It is very probable, however, that a further study of the diets of clinical cases will show not only a deficiency in vitamin A, but also a deficiency in iron and vitamin E.

THERAPEUTIC CONSIDERATIONS

Vitamins are present in varying quantities in many natural foods.

They supply neither energy nor building material, but they do play a very important part in correct utilization of foods.

They seem to profoundly influence or regulate nutrition, glandular activity, and immunity.

Animals are unable to synthesize their vitamins, but depend entirely upon their food for their supply.

A deficient vitamin intake will cause the young to fail to grow normally, stunted reproductive functions, a decline of weight and vigor in adults, predisposition to bacterial infections, and finally the development of certain deficiency diseases such as: rickets, pellagra, scurvy, and ophthalmia.

There are some diseases specifically produced by bacteria. There are a host of other diseases for which we have no definite bacteriologic etiology, but which are associated with some focal infection. The question we must answer is: How did this infection get started in the body?

Why is it that pyorrhea, tonsilitis, bronchitis, gastro-intestinal infections are so universally associated with clinical syndromes? The answer is: excess consumption of devitalized, refined, devitamized, concentrated, cured, dried, and preserved foods, and too limited consumption of foods in their natural state.

In my clinical considerations of one thousand of my own patients, not one patient was found who had taken a correct diet for any appreciable length of time.

CLINICAL CONSIDERATIONS

I wish to report the outstanding pathological findings, as related to vitamins, in the last one thousand cases examined by me.

A and D.—Ninety-four per cent of these cases showed evidence of tubercular infection, either active or inactive. A deficiency of vitamin A is held responsible for a large percentage of tubercular infections. However, vitamin D controls the metabolism of calcium and phosphorus, the calcium of which is very essential both as prophylactic and cure. Milk has been taken by most of these cases to a greater or lesser extent, but the calcium has not been utilized.

B.—Seventy-four per cent were constipated. Fifty-five per cent either had appendicitis or had had appendectomies. Seventeen per cent had no appetite. Twenty-three per cent had a perverted or variable appetite. Eight per cent had anacidity. Forty-two per cent had excess acidity. All of these may be classified as symptoms of vitamin B deficiency. Vitamin B is the most essential of all vitamins, as it must balance an excess of vitamin

A and carbohydrates. Roughage is here found to be deficient.

C.—Forty-seven per cent had mucous colitis. Twenty-seven per cent had gastric or duodenal ulcer. Thirty-nine per cent had pyorrhea. Sixty-one per cent had infected tonsils. A deficiency of vitamin C is largely responsible for these conditions.

E.—Forty-three per cent showed deficient number of red corpuscles—the result of faulty iron metabolism due to a deficiency of vitamin E. Forty-five per cent had a deficient number of white corpuscles—showing a lowered vitality and resistance to disease.

May I call your attention to the fact that while fifty-five per cent of the one thousand cases under consideration had appendicitis, eight-five and one-half per cent of these cases of appendicitis had either tonsilitis, or pyorrhea or both?

Forty-seven per cent of the thousand cases had mucous colitis. Ninety-eight and one-half per cent of these mucous colitis cases had either tonsilitis, or pyorrhea or both.

Twenty-seven per cent of this one thousand had gastric or duodenal ulcer. Eighty-five and one-half per cent of these ulcer cases had either tonsilitis, or pyorrhea or both.

I believe there is some significance in the fact that a large number of patients suffering with gastro-intestinal pathology also have an oral infection which preceded this pathology.

In my own laboratory, I have made cultures of stomach contents and upper bowel contents, and of newly removed tonsils from the same patients, and have found the predominating bacteria from this portion of the gastro-intestinal tract and tonsils to be identical. This should be proof enough that gastro-intestinal pathology is closely related to, and in most cases caused by, oral infection. In a large percentage of cases the cause of oral infection is lack of vitamin C.

Is it not time for us to view with great concern the disaster wrought by eating an unbalanced diet?

By an intelligent use of these newly found friends—vitamins, man looks out upon a new day. The hand of death can be stayed for a season; suffering and sickness can be relieved or prevented; and life can now unfold to him its new treasures of health, happiness, and contentment. What is the profession doing to bring into realization this end?

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RADIUM OR SURGERY IN POOR-RISK PATIENTS*

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West Palm Beach.

The principle of complete assessment in the evaluation of the surgical risk frequently necessitates consideration of other methods of treatment. When the operative risk appears unwarranted in certain types of patients, it is possible to meet the indication by the use of radium. I do not wish to burden the members of this society with an abstract discussion concerning radium or surgery. Numerous volumes are available on this subject. A few case histories are presented with the hope that specific problems will be less tiresome.

1. Mrs. M. H. P., white, age 54, married. Complained of dizziness, nausea, vomiting, and right upper abdominal tenderness, onset September, 1928. Nausea and vomiting occurred at any time day or night, seemed independent of exertion but preceded by vertigo. Intermittent vaginal bleeding started in considerable amounts during October, 1928. In the past history was noted increasing obesity and hypertension since operation for cystic tumor in left side of neck fifteen years previously. Dyspnea on slight exertion for several years. Attacks variously attributed to stones in gall-bladder or right kidney

*Read before the Palm Beach County Medical Society, January 13, 1930.

since age 34 years. Menstrual history uneventful, menopause at 40 years. No bleeding or discharge since. Two children living and well.

Physical examination: short, fat, marked girdle adiposity, weight 225 pounds. Heart enlarged, blood pressure 200/90. Tenderness over gall-bladder region. Pelvic findings negative except for enlargement of uterus, at least 1½ times normal size. Bleeding evidently coming from a lesion higher up than the cervix which appeared normal. Laboratory: blood negative except for a slight anemia, nonprotein nitrogen normal. Urine: trace of albumen, numerous hyaline and granular casts, phthalein output good. X-ray studies (Dr. F. K. Herpel): slight cardiac enlargement and aortic dilatation; increased density of gall-bladder, probably gall-stones; low grade diverticulitis of colon; hypertrophic arthritis of dorsolumbar spine. With such a multiplicity of lesions present, it required several days of hospital observation to determine the fact that the dizziness, nausea, and vomiting were apparently central in origin. There developed a definite slight ataxia of the right arm with well marked tendency to sway or fall to the right. With rest in bed and glucose intravenously, the above distressing symptoms soon disappeared. Dr. J. W. Snyder, in consultation, recommended diagnostic curettage and radium. Under morphine-hyoscine semi-narcosis, abundant curettings obtained, slides of which showed mucosa about 3 times normal thickness with congestion and diffuse extravasation of blood according to Dr. V. M. Jared, pathologist. No definite malignant tissue found but enlargement of uterus instead of atrophy, and bleeding, 14 years past menopause, are definite indications for concern. In view of obesity, nephritis, hypertension, gall-stones, etc., abdominal or vaginal hysterectomy offered too great a risk.

Radium application indicated, and 1200 mghrs. given under morphine-hyoscine semi-narcosis. Two 25 mgm. needles used in brass capsule, enclosed by rubber filter; vaginal packing, retention catheter. Subsequent course excellent. Patient put on 2500 calorie diet and has maintained this for over two years. Reduction in weight 225 to 160 pounds and blood pressure 200/90 to 170/90. You can see that her appearance is not cachectic, in fact much better than before her illness. Discharge from radium ceased about six weeks after application and no further bleeding. Uterus practically normal size although distinct irregularities can now be made out in body of uterus. No urinary albumen or casts noted in the last six months. This patient feels better and is much more active than in the previous ten years. Corpulency was her most serious handicap.

2. Mrs. W. R., white, age 38, married. First seen July 14, 1928, at which time her chief complaints were severe menstrual hemorrhages, weakness, pallor, swelling of ankles and discoloration of skin. She was advised to enter Good Samaritan Hospital for examination and treatment, but was unable to do so at that time. Her blood count and details of examination are given below. On August 27, 1929, over a year later, the patient returned in much more serious condition and anxious for relief. The menstrual bleeding had increased in amount occurring every 3 weeks, lasting 8 to 12 days, very profuse. Past history showed evidence of hemorrhagic disease since infancy. Frequent nose bleeds in childhood, first when three days old. Purpuric spots on skin from slight bruising noted from early age. Definite increased bleeding from small cuts. Bleeding from gums, occasionally lasting all day. Had been in three hospitals in north during 1918, 1920, and 1922 for treatment of various forms of bleeding. Given symptomatic treatment, serums, drugs, etc., apparent temporary relief. Married 15 years; four children, 10, 8, 7, and 4 years. Two miscarriages, 12 and 9 years previously. During pregnancies, always gained weight and strength, during labor and afterward blood loss began as before.

Physical examination: marked pallor of skin and especially mucous membranes. General physical examination largely negative except for great edema of ankles and purpuric spots over arms and trunk. Loud hemic murmur over pulmonary area, pulse 100, min. blood pressure 130/90. Pelvic findings: perineum moderately lax; cervix, midline, slightly enlarged, movable; corpus, 1½ times enlarged, forward, surface irregular and nodular, firm, not tender, movable. Adnexæ negative for mass or tenderness. Detailed laboratory studies (Dr. V. M. Jared):

	Hb.	Rbc.	Wbc.	Index	Diff.
July 14, 1928—Blood	S.35%	3,470,000	3,500	0.5	Neg.
Sept. 1, 1929—Blood	T.40%	1,840,000	3,600	1.1	Neg.

Platelets 100,000. Kahn negative. Clot retraction 45 minutes. Coagulation time 4½ minutes and bleeding time prolonged indefinitely above 30 minutes. Several test tubes of blood could be collected from needle prick to finger unless pressure applied to stop bleeding. Intestinal parasites not found. Urine, trace of albumen.

Diagnosis was made first of a blood disease probably of the purpura hemorrhagica group, with a severe accompanying anemia, and second, myoma uteri, of interstitial type.

The most important indication was to stop the recurrent hemorrhages. Multiple transfusions would not have given much security before operation. Certainly splenic surgery was out of the question at this time and splenic radiation not favored. Radium applied under morphine-hyoscine semi-narcosis in the form of an intrauterine radon tube, filtered by platinum, aluminum foil, and ametal rubber; vaginal packing, retention catheter. 1800 mghrs., menopause dose, was indicated in this case.

Following discharge from hospital, course has been excellent. No more bleeding, slight discharge soon ceased. Liver and liver extract feedings, iron tonics by mouth. Marked improvement in strength and appearance, edema of legs entirely subsided. Two or three years preceding radium application, patient was in bed about half the time, is now able to do entire housework of family. Blood counts approximately 60% normal, purpuric spots occasionally recur and rapidly disappear.

In this connection,[1] it might be mentioned that of 20 cases of splenectomy performed for hemorrhagic purpura at the Mayo clinic between 1923 and 1927, the results were excellent in all except one case, which was curetted, later radium application necessary. All bleeding ceased after application of radium. The diagnosis of myoma was definitely made in the case described above and blood disease considered a factor increasing severity of symptoms and danger of ill advised treatment.

3. A. T., colored, aged 46, married. Chief complaints were weakness, lump in abdomen, profuse menstrual hemorrhages. Lump first noticed eight years previously and had gradually increased in size until now above umbilicus. Greatly disabled in last year, in bed almost continuously for past three months. Examination showed large mass filling pelvis to level 3f. above umbilicus, larger on right, very tender to pressure, slightly movable. Cervix, to left of midline, normal size and shape, slight erosion. Mass to right of cervix probably an intraligamentary part of large myoma. Mass to left of cervix, similar in shape but not so large. Numerous nodules size of walnut on upper anterior wall. Diagnosis made of large myoma of uterus with possible partial necrosis of tumor owing to marked increase in tenderness during the past ten days with afternoon temperature of 99.8°.

Supravaginal hysterectomy and bilateral salpingo-oophorectomy performed with removal of this specimen.* You may notice the level of peritoneal attachment outlined on jar in ink; below this mark are three large masses which constitute at least half of the tumor. Fibroids can be very easy or very hard to remove, depending on their shape and access to vessels rather than upon their size. Observe also the calcified ring at the upper portion with a necrotic center. This patient has been in good health since her discharge from the hospital two years ago. The risk in this case was very great but operative attempt warranted. Radium not to be considered on account of size of tumor and subserous location of nodules. Calcification and necrosis as later verified also contraindications.

4. Mrs. W. D., age 40, white, married, one child. Chief complaints were a lump in abdomen, profuse menstruation, and intractable constipation. Lump first noticed three years previously and increase in size had been rapid. General examination showed a relative anemia. Pelvic findings: cervix, normal size and shape, displaced far posterior by large nodular mass in front which also extended almost to pelvic wall on each side, slightly movable, no tenderness. Mass extended up into abdomen to a level 2 f. above umbilicus. Adnexae, no separate mass or tenderness made out distinct from uterine mass. Diagnosis: large myoma of uterus.

Supravaginal hysterectomy, with removal of this specimen on September 12th, 1928; subsequent course excellent. Note the distribution of large nodules on specimen.* The largest growth arose from posterior wall of uterus. Radium inadvisable because of size of tumor with probable subperitoneal location of myomatous growths more or less separate from cavity of uterus. This last patient could obviously be promised a good result from surgery with a minimum risk.

CONCLUSIONS

Four cases have been presented with somewhat similar complaints but complete assessment of each individual has resulted in widely different forms of treatment. Procedures were selected which afforded the greatest safety. Follow-up records have been satisfactory in each.

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The Journal of the Florida Medical Association, Inc.

Owned and published by the Florida Medical Association, Inc.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of Congress of October 3, 1917; authorized October 16, 1918.

Published monthly at Jacksonville, Florida. Price $3.00 a year. Single numbers, 30 cents.

Contributions for publication in this journal, whether scientific papers or reports of County Secretaries, should be typewritten.

Address Journal of the Florida Medical Association, Inc., Box 81, Jacksonville, Fla. Telephone: 5-6186

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GROUP LIABILITY INSURANCE

The following information has been forwarded to our members through a letter issued by the Executive Committee:

"Dear Doctor:

At the last meeting of the Florida Medical Association, the present Executive Committee was authorized by the House of Delegates to arrange with some insurance company for a group malpractice insurance policy which would be available for any member of the F. M. A. who might desire it, provided such insurance could be obtained for our members at premium rates less than those charged for individual or small group policies.

"Your Executive Committee has made a careful study of malpractice insurance as it is now carried by the various members of our Association. Also, many conferences have been held with representatives of several responsible insurance companies.

"An arrangement has finally been made with the United States Fidelity and Guaranty Company, of Baltimore, for a group policy which will comply with the requirements of the House of Delegates.

"Any member of the Florida Medical Association will be eligible to become a member of this group. In every form of policy there will be a saving in premium rates. This saving will be less for those men who have formerly been insured in small county groups. For those who have been carrying individual policies, it will naturally be greater, amounting in some forms of policies to over 40%.

"This service will be available October 14th, next. Individual policies must be taken out through local representatives of the United States Fidelity and Guaranty Company in your county. Further information may be obtained from the secretary of your county society:

"Respectfully,
L. M. ANDERSON, M.D., Chairman;
M. A. LISCHKOFF, M.D.,
G. R. HOLDEN, M.D.,
Executive Committee."

This arrangement has been under consideration for some time and the Association's only interest in obtaining this insurance is in order that we may serve our members.

The following table indicates the cost of the state group malpractice insurance as compared with the lowest premiums obtainable for county group and individual policies; also the percentage of premium saved in each type of policy:

Amount of Insurance	State Group Premium	County Group Premium	Percentage of Saving	Individual Policy Premium	Percentage of Saving
$ 5,000/ 15,000.....	.....	$17.50	....	$25.00	....
7,500/ 22,500.....	$17.50	.....	....	.....	....
10,000/ 30,000.....	21.35	23.33	8%	33.33	36%
15,000/ 45,000.....	23.27	26.25	11%	37.50	38%
20,000/ 60,000.....	24.85	28.53	13%	40.75	39%
25,000/ 75,000.....	25.73	29.75	14%	42.50	39%
50,000/150,000.....	29.22	35.00	17%	50.00	42%

For members using X-ray or radium, or both, for treatment, the above premiums will be increased 100%; members using X-ray for diagnosis only will not incur any additional premium charge.

Members employing assistant physicians, surgeons, dentists, anesthetists, X-ray or radium technicians will be charged 50% additional of above rates for coverage on such assistants.

Each practicing physician should carry liability insurance for the number of malpractice suits seems to be on the increase. Most malpractice suits are unjustified but the cost of defending yourself is considerable and should be protected against. If you are protected by liability insurance, you are spared the financial deprivation that may occur as a result of such suit.

STATUS OF MEDICAL EDUCATION

Medical education in the United States has shown a tremendous improvement since 1900, according to the report of the Council on Medical Education and Hospitals of the American Medical Association. The Association has been actively interested in this field since its organization in 1847, when its main object was stated to be "the improvement of medical education in the United States." For the thirtieth consecutive year, the Journal of the American Medical Association publishes statistics on medical education.

The report shows that requirements of premedical training have been raised, that standards of medical schools have been more rigidly upheld and that facilities for the training of interns have been improved.

One chart of general interest in the report gives for forty-one countries the number of physicians in proportion to the population. The United States has more physicians in proportion to population than any other country in the world.

The number of medical schools has been materially reduced, due to the merging of institutions into a smaller number of better equipped schools. The total number of medical students is still on the increase, however. There were 21,597 in 1929, with 4,565 graduates.

STATE NEWS ITEMS

Dr. H. Mason Smith of Tampa was recently elected president of the State Board of Health. Dr. H. E. Palmer of Tallahassee was appointed to succeed Dr. W. D. Nobles of Pensacola, resigned, and Dr. Edward M. L'Engle of Jacksonville was appointed to succeed Charles H. Mann of Jacksonville, resigned. The first meeting of the board was held on Saturday, October 25th, at Tallahassee. Governor Carlton and Dr. Henry Hanson, the state health officer and secretary of the board, were also in attendance.

The annual meeting of the Florida Midland Medical Society which convened at Orlando on October 8th was of unusual interest and the papers prepared for reading at this meeting were instructive and held the attention of those present. Eight papers were read and all papers were open for a general discussion. Noon luncheon was served and at the close of the scientific program, the annual report of the secretary-treasurer was read and an election of officers held with the following results: Dr. L. L. Andrews, Orlando, president; Dr. T. M. Rivers, Kissimmee, first vice-president; Dr. Joseph W. Taylor, Tampa, second vice-president, and Dr. Robert C. Black, Plant City, secretary and treasurer.

* * *

Dr. Earl C. MacCordy of St. Petersburg recently moved from 202 Snell Arcade Building to 1335 9th Street, North.

* * *

Dr. and Mrs. H. C. Dozier of Ocala made quite an extended trip in the North recently and Dr. Dozier attended the meeting of the American College of Surgeons in Philadelphia while away.

* * *

Dr. John Blake White has forwarded his resignation as House Physician at the Hotel Ormond, Ormond Beach, having been resident there for twenty-three years. A trip to Europe is contemplated.

* * *

Dr. and Mrs. L. C. Ingram of Orlando have returned from New Orleans where they entered their son in Tulane for his senior year of medicine.

* * *

Dr. and Mrs. H. Gates of Bradenton enjoyed a very pleasant trip through the Mississippi Valley, Tennessee and North Carolina mountains, recently.

* * *

Dr. L. M. Anderson of Lake City, chairman of the Executive Committee of the Association, spent a day in Jacksonville recently and among other things, met with Dr. Gerry Holden, one of the other members of the committee, in connection with some of the business of the Association.

Dr. and Mrs. Marshall Taylor and family of Jacksonville who have been spending the summer in their cottage at Atlantic Beach, spent several weeks in North Carolina before settling down in their home in Riverside.

* * *

Dr. and Mrs. J. R. Chappell have returned to Orlando from a visit to Atlanta and Douglas, Georgia.

* * *

An election of officers was held at the Pinellas County Medical Society meeting, October 3rd, with the following results:

R. K. O'Brien, M.D., President.
L. M. Gable, M.D., First Vice-President.
W. G. Post, Jr., M.D., Second Vice-President.
O. O. Feaster, M. D., Secretary.
George E. Miller, M. D., Treasurer.

New Censors elected for three years are T. R. Griffin, M.D., and H. W. Wade, M.D. All of the officers elected are residents of St. Petersburg.

* * *

Dr. Maurice E. Heck of Miami returned recently from Bushkill, Pennsylvania.

* * *

Dr. H. O. Brown of Clearwater recently attended Dr. Bloodgood's clinic on bone cancer at Baltimore, Maryland.

* * *

Dr. George A. Lassman of Tampa attended the International Medical Assembly Meeting at Minneapolis, Minnesota, and also visited the Mayo Clinic and various hospitals in Chicago, New York, Philadelphia and Baltimore. Dr. Lassman expects to take some post-graduate work while on this trip and will be away about ten weeks.

* * *

Dr. Duncan T. McEwan of New York, nephew of Dr J. S. McEwan of Orlando, will be associated with Drs. McEwan and Edwards at the Orlando Clinic, Orlando.

* * *

Dr. and Mrs. R. E. Wilhoyte of Lake Wales recently visited Niagara Falls and Albany, New York, and also made quite a visit at Louisville, Kentucky.

* * *

Dr. and Mrs. Norman M. Heggie and daughter, Miss Jeanne, of Jacksonville, spent a very enjoyable Fall visit in New York City.

Dr. John S. McEwan of Orlando is making a trip through the North and expects to be in Baltimore and visit Johns Hopkins Clinic before returning.

* * *

Dr. J. Harrison Hodges of Gainesville has returned from a vacation trip of several weeks spent at New York and Atlantic City.

* * *

Dr. W. H. Ellis of Tumlin Clinic, Miami, has returned home with his family after a fine vacation spent with relatives in Georgia and Tennessee.

* * *

The medical examiners of Florida for the Aeronautics Branch of the Department of Commerce were the guests of Dr. W. C. McConnell, St. Petersburg, November 11th, for an organization meeting. The organization will hereafter meet with the State Medical Association.

* * *

Dr. and Mrs. Graham E. Henson of Jacksonville announce the engagement of their daughter, Gertrude Elizabeth, to William R. Rowe of Jacksonville.

* * *

Dr. Horace Day has returned to Orlando from a visit to Tennessee, his former home.

* * *

Dr. Henry Hanson, state health officer, recently attended the meeting of the American Public Health Association at Ft. Worth, Texas, and also attended the post convention meeting of the A. P. H. A. in Mexico City. Other members of the Florida Medical Association in attendance who are actively engaged in health work in Florida, were Dr. Paul Eaton, director of State Board of Health laboratories; Dr. F. A. Brink, director Bureau of Communicable Diseases; Dr. N. A. Upchurch, city health officer of Jacksonville; also, Dr. Stewart Thompson, director of the Bureau of Vital Statistics.

* * *

The Central Florida Medical Society held its semi-annual meeting at Gainesville on the evening of October 28. The members and their wives and guests, and wives of guests, were entertained at a delightful dinner at seven o'clock at the Hotel Thomas. After dinner, while the doctors were engaged in their scientific and business meeting, the women enjoyed a card party which had been arranged for their pleasure. Everyone, especially the guests, enjoyed and appreciated the hospitality of the Central Florida Medical Society.

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Dr. H. E. White of St. Augustine attended the meeting of the American College of Surgeons at Philadelphia recently. Dr. White received his Fellowship the night of October 17th.

* * *

Honorable George M. Dame, Senator Fifth District Georgia, and father of Dr. George A. Dame and Dr. Leland H. Dame of Inverness, died at his home at Homerville, Georgia, August 14, 1930.

* * *

Dr. T. Allen Jones has returned to Orlando from an eight months' residence in Asheville, North Carolina, where he went for rest. Dr. Jones will soon resume practice in Florida.

* * *

Dr. G. S. Osincup has returned to Orlando after visiting clinics in Philadelphia and New York. He also visited in Canada, where he was joined by Mrs. Osincup.

* * *

A beautifully framed likeness of the late Dr. Joseph Y. Porter, Florida's first state health officer, has been hung in the executive offices of the State Board of Health building in Jacksonville. The portrait was a gift from the members of the Porter family.

* * *

A very interesting meeting of the Pinellas County Medical Society was held in St. Petersburg October 17th. Dr. W. G. Post of St. Petersburg discussed a clinical case, "Paget's Disease, History and X-rays." Dr. R. H. Knowlton of St. Petersburg read a paper on "Pernicious Anemia, Its Treatment and Report of Cases." Dr. L. W. Horne of St. Petersburg read a paper on "Diabetes Mellitus and Some of Its Aspects."

* * *

Dr. Will L. Wood, formerly of Pine Castle, recently moved to Mount Dora.

* * *

Lieut. Col. L. J. Arnold of the U. S. Veterans' Hospital, Lake City, will be stationed at the Veterans' Hospital, Mt. Alto, Washington, D. C., for a period of four months.

* * *

Dr. G. C. Tillman and family of Gainesville returned recently from a six weeks' vacation in Boston, Massachusetts.

The Medical Study Club of Orlando will have Dr. H. C. Bumpus of the Neurological Department, Mayo Clinic, as guest speaker at their December meeting. The date is not definitely set but very likely will be Friday, December the 5th. All members of the Florida Medical Association are invited to attend this meeting and hear Dr. H. C. Bumpus. Announcement cards will be mailed out later, giving the exact date and the subject which Dr. Bumpus will discuss. The Medical Study Club of Orlando has a guest speaker of national prominence once every year so the meeting in December will be of interest to many doctors in the state.

* * *

Dr. Herman Perkins, formerly of Holopaw, recently moved to 3001 Kings Road, Jacksonville.

* * *

The first fall meeting of the Duval County Medical Society was held Tuesday evening, October 7th, in the Chamber of Commerce Building, Jacksonville. Dr. A. D. Stollenwerck headed the scientific program and presented an interesting paper on "Analgesia and Anesthesia in Obstetrics." With the present wave of enthusiasm throughout the medical world for better and safer methods of analgesia and anesthesia the above subject was of particular interest to every member.

HENRY KOERT DuBOIS

Dr. Henry Koert DuBois, 83, pioneer physician of Volusia County, died at his home in Port Orange at 5:15 p. m., September 9, 1930, following a long illness. Dr. DuBois was born in Milwaukee, Wisconsin, August 31, 1847, and with his parents, moved to Bangall, New York. He was educated at Columbia University and served his internship at Bellevue Hospital, after graduating in 1870. He served as New York City physician for 10 years. Breaking down in health, he came to Volusia County in 1881, and located in DeLand. In 1887, he was married to Miss Florence Bracey, daughter of the late Dr. H. D. Bracey, then residing at Beresford, west of DeLand, who survives with one son, Koert DuBois, Port Orange, and two grandchildren. He moved to Port Orange in the fall of 1887 and established a practice which extended over the entire county and as far south as Titusville, and which was covered by horse and buggy for many years.

Dr. DuBois was an active member of the Florida Medical Association for many years, serving as its president from 1896 to 1897. He, at different times, served as president of the Volusia County Medical Society. At the last annual meeting of the Florida Medical Association, Dr. DuBois was one of the first four on whom honorary membership was conferred. He retired from active practice only a few years ago when his health failed completely.

When Port Orange was incorporated in 1913, Dr. DuBois was elected its first mayor. He was a York Rite Mason, Daytona lodge, and a charter member of Independent lodge, Odd Fellows, St. Augustine. Dr. DuBois was appointed and served on the United States revising board of pharmacopeia, Washington, representing Florida physicians, for 30 years. The board meets once every 10 years.

The following resolutions were recently spread upon the minutes of the Leon-Gadsden-Liberty-Wakulla-Jefferson County Medical Society:

WHEREAS, it has pleased Almighty God to terminate the career of our esteemed associate

JOSEPH CORNELIUS INMAN,

who died August 9, 1930, and

WHEREAS, in the special field of Public Service in which Dr. Inman had elected to practice, his work was characterized by a scrupulous regard for responsibility, a most conscientious and thorough execution of all duties, and a capably directed exercise of an exact knowledge of medical science; and

WHEREAS, Dr. Inman, by virtue of his professional accomplishments and personal characteristics, won the highest appreciation, and inspired the warmest affection, of his associates:

Therefore be it resolved, That we, the members of the Second District Medical Society, hereby express profound regret that a career, marked with such promise of outstanding achievements, has been so suddenly ended; and

Be it further resolved, That this Resolution be entered upon the records of the Second District Medical Society as a token of the high esteem commanded by Joseph Cornelius Inman during his life; and as a memorial of the deep regret impressed upon us by his passing.

A very interesting meeting of the Leon-Gadsden-Liberty-Wakulla-Jefferson County Medical Society was held at Chattahoochee recently and a number of very interesting and instructive papers were read and discussed. Dr. W. C. McConnell of St. Petersburg was guest speaker and read a very interesting paper. The original articles have been placed in the hands of the Committee on Publication and will undoubtedly appear in the pages of this Journal at later dates. New officers were elected for the ensuing year which resulted as follows: Dr. J. F. Williams of Monticello as president, Dr. Wm. W. Massey of Quincy, vice-president, and Dr. O. G. Kendrick of Tallahassee as secretary-treasurer.

* * *

The United States Civil Service Commission announces open competitive examinations for Medical Officer, Associate Medical Officer, and Assistant Medical Officer. Applications for examinations must be on file with the United States Civil Service Commission, Washington, D. C., not later than December 30, 1930. These examinations are to fill vacancies in the Veterans' Bureau, Public Health Service, Coast and Geodetic Survey, Panama Canal Service, and Indian Service.

* * *

Dr. A. R. Haisfield of Pensacola recently attended the International Assembly of the Inter-State Post-Graduate Association of North America held at Minneapolis, Minn.

* * *

Dr. Elmo D. French of Miami has just returned from a visit to Europe after attending the Eighth International Congress of Dermatologists at Copenhagen. Clinics were attended at London and Paris before returning to the United States.

* * *

EXPERIENCED TECHNICIAN, qualified in all laboratory and X-ray technique. Hospital and clinical experience. B. S. Degree. Best references. L. T., care Florida Medical Association, Box 81, Jacksonville.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

of THE JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION, INC., published monthly at Jacksonville, Florida, for October 1, 1930.

STATE OF FLORIDA, } ss.
COUNTY OF DUVAL. }

Before me, a Notary Public, in and for the State and county aforesaid, personally appeared Shaler Richardson, M.D., who, having been duly sworn according to law, deposes and says that he is the editor of the JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION, INC., and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of Publisher, Florida Medical Association, Inc. Post office address, Box 81, Jacksonville, Fla.

Editor, Shaler Richardson, M.D. Post office address, Box 81, Jacksonville, Fla.

Managing Editor. None.

Business Manager, Stewart G. Thompson, D.P.H. Post office address, Box 81, Jacksonville, Fla.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Florida Medical Association, Inc. (A Corporation not for profit—no stockholders).

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest, direct or indirect, in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the six months preceding the date shown above is (This information is required from daily publications only.)

FLORIDA MEDICAL ASSOCIATION, INC.,
By Shaler Richardson, Editor.

Sworn to and subscribed before me this 25th day of September, 1930. S. G. Thompson,

(SEAL) Notary Public State of Florida at Large.
(My commission expires April 9, 1932.)

Form 3526—Ed. 1924.

NOTE.—This statement must be made in duplicate and both copies delivered by the publisher to the postmaster, who shall send one copy to the Third Assistant Postmaster General (Division of Classification), Washington, D. C., and retain the other in the files of the post office. The publisher must publish a copy of this statement in the second issue printed next after its filing.

Fifty-Eighth Annual Meeting
FLORIDA MEDICAL ASSOCIATION
Orlando—May 12-13, 1931

THE WOMAN'S AUXILIARY PAGE

WOMAN'S AUXILIARY
TO THE
FLORIDA MEDICAL ASSOCIATION, INC.

State Editor
MRS. EDWARD JELKS,
2244 St. Johns Avenue
Jacksonville

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REASONS FOR ORGANIZING A WOMAN'S AUXILIARY

The idea of forming a Woman's Auxiliary to the medical organization was born in the brain of a Texas woman, the wife of a physician, about eleven years ago. Following that suggestion, and with the approval of the American Medical Association, the nucleus was formed of what is now the Woman's Auxiliary to the American Medical Association. This organization is today composed of about 35 state auxiliaries, which in turn are made up of county organizations.

One may ask, what specific work awaits such a local organization? This question was splendidly answered by a speaker at a meeting of the New Jersey state auxiliary, who had the following to say: "The state medical society is now conducting a campaign of public education in medical matters, making use of the radio, moving pictures, newspapers, and pamphlets for broadcasting information in the line of preventive medicine, and supplying speakers to address lay organizations upon the prolongation of life through the safeguarding of health. You can help materially in furtherance of this program by supplying speakers to address Women's Clubs or by securing engagements for speakers from the medical society.

"It not infrequently happens that bills are introduced into our municipal, state, or national legislative halls, which, if enacted into law, would seriously menace the public welfare. On the other hand, desirable health legislation often languishes for want of public appreciation and support. Without becoming 'politicians,' in the objectionable sense of the word, you can wield considerable influence for good, through organized opposition to bad acts or through support of good bills. The medical profession is not seeking enactment of any special or selfish legislation, and will merely ask your aid in protecting the health interest of the community.

"When women accompany their husbands or sons or brothers to state or national medical society meetings, they too often feel that they are *with*, but not *in*, the 'party.' You can, if you wish, effect a closer tie with your professional relatives and become more a real partner in their pleasures and their work.

"Your influence can aid very materially in making medical society meetings more enjoyable; the doctor generally has too much work and too little play; you can bring to these scientific conferences a social factor that will make them more truly recreational in character."

A. M. A. GUIDANCE

The American Medical Association authorized the Trustees to appoint a "liaison committee" to guide the Woman's Auxiliary in its policies. That committee, including in its make-up some of the most distinguished members of the medical profession, gave the following reasons, among many, why women's auxiliaries to medical societies should be formed:

"To organize for the purpose of responding to any call from the medical profession and to do all the work assigned to it from time to time.

To promote closer social contact between the families of physicians.

To assist in lightening the burdens of humanity.

To help preserve the health of the people.

To outline programs on health, approved by the Liaison Committee, to be presented before other organizations.

To recommend to all clubs that they place capable physicians' wives in charge of club health departments, in order to secure authoritative programs.

To secure, if possible, moving pictures to illustrate the importance of the annual physical examinations by the family physician. Each member of every household, servants included, should be examined.

To assist in providing health talks over the radio by prominent physicians and health officers.

These speakers should be appointed by the county medical society.

To continue our efforts to place Hygeia in every home, as it is the leading health magazine of the United States and is published by the American Medical Association."

Pinellas County

The Pinellas County Auxiliary held its fall meeting on the evening of October 17, at the same time and in the same building in which the County Medical Society held its regular meeting. In this way, after adjournment of both meetings, there was an opportunity for physicians' families to become acquainted. An enthusiastic meeting was reported.

Volusia County

The Auxiliary to the Volusia County Medical Society held its first meeting of the season on the evening of October 21, at the Ocean House, New Smyrna. There was a very good attendance and prospects of interest for the year. The members are planning to give the men a Thanksgiving bridge party. The President appointed Mrs. Wells of Daytona Beach (our state president), Chairman of Publicity for Volusia county.

Duval County

The last meeting of the fiscal year, of the Duval County Auxiliary was held on the morning of October 2, at the Jacksonville Chamber of Commerce. The President, Mrs. Driskell, called on Mrs. Gordon Ira for a report of the National Auxiliary meeting, which she attended in Detroit this summer. Mrs. Ira's report was most interesting. She reported the appointment of one of our members, Mrs. Herrman Harris, to the National Hygeia committee, following her nomination by Mrs. Wells, of Daytona Beach. Mrs. Ira closed her report by complimenting our state President, Mrs. Wells, upon the efficient manner in which she represented the Florida Auxiliary at the National Convention in Detroit.

Following Mrs. Ira's report, Dr. Blachly, Director of the Bureau of Hygiene for the state, gave a most interesting address on public health education.

An election resulted in the following officers: President, Mrs. William Kirk; Vice-President, Mrs. Horace Drew; Secretary, Mrs. E. W. Veal; Treasurer, Mrs. S. R. Norris.

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COUNTY SOCIETY	SECRETARY	MEETINGS				Dues Paid.
		Date	Time	Place	Luncheon?	
Alachua	J. E. Maines, Jr., M.D., Gainesville.	2nd Tuesday	12:00 Noon	White House	Yes.	88%
Bay	Don S. Fraser, M.D., Panama City.					50%
Brevard	I. K. Hicks, M.D., Melbourne.	3rd Tuesday		Varies		91%
Broward	Ralph Lingeman, M.D., Ft. Lauderdale.	2nd Tuesday	8:00 P.M.	Chamber of Commerce	No.	86%
Columbia	T. H. Bates, M.D., Lake City.	1st Monday.	7:30 P.M.	Blanche Hotel		73%
Dade	E. N. McKenzie, M.D., Miami.	1st Friday	8:30 P.M.	Club Room, Huntington Bldg.	Occasionally.	91%
DeSoto-Hardee-Highlands	H. V. Weems, M.D., Sebring.		8:00 P.M.	Varies	Yes.	93%
Duval	Kenneth A. Morris, M.D., Jacksonville.	1st Tuesday	8:15 P.M.	Chamber of Commerce Building	No.	85%
Escambia	J. M. Hoffman, M.D., Pensacola.	1st Tuesday	8:00 P.M.	Board of Health Building	No.	92%
Hamilton	J. R. Bruce, M.D., Jasper.					100%
Hillsboro	J. T. Cowart, M.D., Tampa.	1st and 3rd Tuesdays	8:00 P.M.	Tampa Municipal Hospital	No.	84%
Jackson	C. H. Harrison, M.D., Cottondale.	2nd Tuesday	3:00 P.M.	Marianna	No.	69%
Lake	W. L. Ashton, M.D., Umatilla.	1st Thursday	12:30 P.M.	Eustis	Yes	100%
Lee	H. Quillian Jones, M.D., Ft. Myers.	3rd Friday	7:30 P.M.	Lee Memorial Hospital	No.	83%
Leon-Gadsden-Liberty-Wakulla-Jefferson	O. G. Kendrick, M.D., Tallahassee.	Quarterly	3:00 P.M.	Varies	Yes.	86%
Madison	Geo. O. Davis, M.D., Madison.					
Manatee	A. Q. English, M.D., Manatee.	1st and 3rd Tues. Oct. to May; 2nd Tues. May to Oct.	7:00 P.M.	Dixie Grande Hotel	Yes.	92%
Marion	Thos. H. Wallis, M.D., Ocala.	3rd Thursday	12:30 P.M.	Marion Hotel	Yes.	91%
Monroe	W. R. Warren, M.D., Key West.	1st Sunday	9:00 P.M.	Varies	Yes.	
Orange	J. R. Chappell, M.D., Orlando.	3rd Wednesday	8:30 P.M.	Varies	No.	85%
Palm Beach	R. G. Lewis, M.D., W. Palm Beach.	2nd Monday	8:00 P.M.	Court House	Yes.	79%
Pasco-Hernando-Citrus	Geo. R. Creekmore, M. D., Brooksville.	2nd Thursday	7:00 P.M.	Varies	Yes.	87%
Pinellas	O. O. Feaster, M.D., St. Petersburg.	Every other Friday	8:00 P.M.	500 Power & Light Bldg.	No.	84%
Polk	Herman Watson, M.D., Lakeland.	2nd Wednesday in Feb., Apr., June, Aug., Oct., Dec.	1:00 P.M.	Lakeland	Yes.	95%
Putnam	E. W. Warren, M.D., Palatka.	2nd Thursday	7:00 P.M.	James Hotel, Palatka	Yes.	64%
St. Johns	A. C. Walkup, M.D., St. Augustine.	3rd Tuesday	8:30 P.M.	Varies	Yes.	86%
St. Lucie-Okeechobee-Indian River-Martin	C. L. Davis, M.D., Okeechobee.	3rd Thursday	8:00 P.M.	Varies	Yes.	100%
Sarasota	F. C. Metzger, M.D., Sarasota.	2nd Tuesday	8:30 P.M.	Varies	Occasionally.	75%
Seminole	J. T. Denton, M.D., Sanford.	2nd Friday	8:00 P.M.	City Hospital		100%
Sumter	W. E. Mitchell, M.D., Coleman.	2nd Tuesday		Varies	No.	100%
Suwannee	W. C. White, M.D., Live Oak.					83%
Taylor	R. J. Greene, M.D., Perry.	Last Thursday	12:15 P.M.	Eldorado Cafe	Yes.	60%
Volusia	J. Ralston Wells, M.D., Daytona Beach.	2nd Tuesday	7:30 P.M.	Varies	Yes.	87%
Walton-Okaloosa	A. G. Williams, M.D., Lakewood.	3rd Thursday	8:00 P.M.	Varies	Occasionally.	100%
Washington-Holmes	H. A. McClure, M.D., Chipley.					56%

NOTE—Secretaries: Please submit information to complete the above schedule.

TUBERCULOSIS ABSTRACTS

A REVIEW FOR PHYSICIANS

ISSUED MONTHLY BY THE NATIONAL TUBERCULOSIS ASSOCIATION

IN MAKING a physical examination of the chest, the general practitioner should be able to arrive at a correct diagnosis or conclusion in nine-tenths of the cases. Yet it is common experience that many cases of tuberculosis remain undiagnosed long after that should have been possible by the means now at our command. This unfortunate situation is due largely to the unsatisfactory method of teaching physical examination technique to the medical student and to the far too complicated treatment of the subject in our textbooks. Such is the opinion of James Alexander Miller, who in the foreword of "Procedure in Examination of the Lungs" by Arthur F. Kraetzer commends this little book as a "real contribution in simplifying the methods involved." Brief abstracts of the book follow.

PROCEDURE IN EXAMINATION OF THE LUNGS

Conventional teaching of physical diagnosis is deductive. It starts with general principles and works down to the specific. Actual examination of a patient is inductive. It begins with the gathering of particular findings and then works upward to an inductive conclusion. Of course, the student must visualize the entire field of possibilities; he must have a descriptive knowledge of disease, but the development of a good examination technique is best acquired by the inductive method. The author follows this plan in his book, reproducing the actual steps taken in the clinic to gather the facts of an individual case and to deduce therefrom the causative condition or pathology. Chest diagrams amplify the text.

He says: "Nothing in Medicine is worse done than the early diagnosis of tuberculosis, and one of the factors that contributes to this is, I am sure, the unnaturalness and obscurity of early training. Not only the method, but also the matter, is vague. Nothing could be more confused, for example, than the classical and utterly obsolete classification of rales. The terms crepitant and subcrepitant are entirely ambiguous. They have no place in modern clinical terminology."

SYSTEMATIC PRACTICE NECESSARY

In learning to distinguish the characteristics of chest sounds as revealed by percussion and auscul-

(*Continued on page* 242)

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ANATOMICAL STUDIES

for the Practitioner

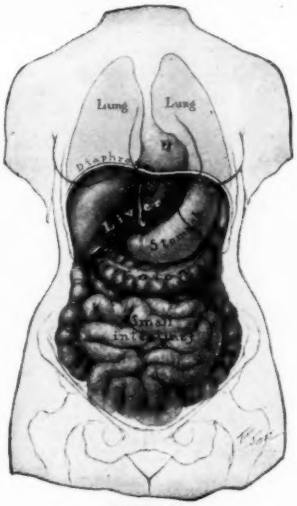

Figure A

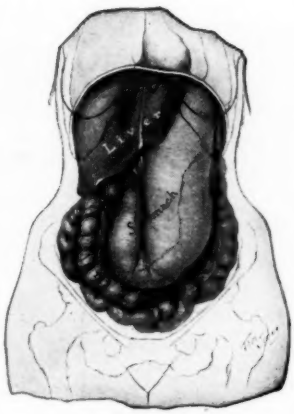

Figure B

POSITION AND RELATIONSHIP OF THE VISCERA IN THE FEMALE

Figure A — Normal female figure.

Figure B—Visceroptosis (abdominal ptosis, Glenard's disease, enteroptosis); position of colon, lying behind the stomach, indicated by dotted line.

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Literature on request

MERCK & CO. INC. Rahway, N. J.

tation, it is well to practice leisurely and patiently on a willing, normal subject. Four topographical points are selected for comparison in the following order:

1. A point rather low in the right axilla (gastric tympany and heart sounds on the left may cause confusion).
2. The left supra-clavicular region.
3. The right, supra-clavicular region.
4. The side of the neck.

In percussion, the resonance or duration of sound is easily detected by asking, "Which sound lasts longer?" Determining the pitch of the percussion note is somewhat more difficult, especially for ears not delicately attuned. However, unmusical ears can learn to detect differences by trying to "sing" the sound elicited. The student should also remember that the duller of two notes is always the higher pitched. When the differences in resonance in the four points selected are distinguishable to the student, he begins to hear more subtle shadings.

In auscultation, the four selected points are compared for (a) intensity, or rather, loudness (one does not have to be a Laennec to determine that); (b) length of respiratory sound (which is quite as easy); (c) pitch of respiratory sound, being careful not to mistake intensity for higher pitch; (since loud sounds and those of high pitch are more readily heard than less loud sounds and those of less low pitch, it is easy to fall into the error of concluding that a loud sound is of high pitch, whereas it may actually be lower pitched); (d) the quality of breath sounds, such as that like the gentle rustle of microscopic leaves (vesicular) as heard well at point one, and at the other extreme the hollow tracheal sound as heard at point four. When the several differences and combinations of these qualities are mastered, the student learns to "synthesize" them in terms of the physiological and anatomical structures that give the sounds their characteristics.

With this preliminary mastery of the sounds of the four selected points of the normal chest, the student is next introduced to the study of the entire chest. Inspection comes first; in addition to general appearance, there are certain conditions which must be specifically looked for, such as the position of the trachea, the pitch of the chest, and clubbing of fingers. Then follows palpation, which includes tactile fremitus. Percussion is next pur-

(*Continued on page* 244)

SUCCEEDING WALLACE-SOMERVILLE SANITARIUM, MEMPHIS, TENN.

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WALTER R. WALLACE, M.D.
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sued systematically and always by comparing one side of the chest with the other.

RALES AND THEIR MEANING

The four succeeding chapters are devoted to auscultation, including one exclusively on rales. The author deplores the "strained effort to endow a particular rale with a specific and invariable significance," which has caused so much confusion in diagnosis. The most general and, at the same time, accurate statement he is willing to make about rales is that they represent either inflammation or transudation, which includes "about all that can happen to a lung." To interpret the meaning of rales, he recommends the following three criteria; namely, the consideration of:

1. All the data that have gone before under symptoms, inspection, palpation, percussion, and changes in breath-sounds.

(*Continued on page* 246)

Trachea in normal position.
Rales are conclusive.
Slight apical dulness (easier to recognize and more significant when at *left* apex).
Greater diminution of breath-sounds at apex than at base (easier to recognize and more significant when at *right* apex)
Diminished breath-sounds over a considerable part of one side of chest.
Diminished respiratory excursion may be present.

I. Diminished breath-sounds over a considerable part of one side.

A. The area of diminished breath-sounds is resonant (except perhaps at the apex).

1. The patient is not in pain and is not dyspnoeic.

Diagnosis: Without apical rales tuberculosis is suggested. With apical rales, tuberculosis is certain.

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No dosage directions accompany MEAD'S VIOSTEROL in Oil, 250 D originally called Acterol

···EFFECTIVE··· OCTOBER 1st, 1930

Mead's Viosterol in Oil is now designated 250 D because, in accordance with the provisions of the Wisconsin Alumni Research Foundation, we are now assaying the product by the Steenbock method. Before October 1, 1930, this same product was assayed by the McCollum-Shipley method and was designated 100 D. This was done in the belief that this method gave results comparable with that prescribed by the Wisconsin Alumni Research Foundation for its licensees. It was discovered, however, that when assayed by this method the potency of the product was virtually 250 D in comparison with products standardized by the Steenbock method.

Mead's Viosterol in Oil, 250 D (Steenbock method)—in normal dosage—is clinically demonstrated to be potent enough to prevent and cure rickets in almost every case. Like other specifics for other diseases, larger dosage may be required for extreme cases. It is safe to say—based upon extensive clinical research by authoritative investigators (reprints on request)—that when used in the indicated dosage, Mead's Viosterol in Oil, 250 D is a specific in almost all cases of human rickets, regardless of degree and duration, as demonstrated serologically, roentgenologically and clinically.

The change in Mead's Product is in designation only—not in actual potency. Mead's Viosterol in Oil, 250 D —in proper dosage—continues to prevent and cure rickets.

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PREVENTS AND CURES RICKETS

2. The geography of the rales, whether at the top, hilum, base, or some intermediate and unclassifiable area of the lung; whether unilateral or bilateral; whether localized or generalized; whether few or many.

3. The actual type of rale itself, whether dry, moist (fine, medium or large), sibilant or sonorous.

A fourth and often essential criterion is the X-ray. These criteria are carefully elaborated and described.

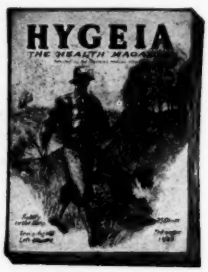
"SIGNS" OF TUBERCULOSIS

Chapter XI on "The Signs of Tuberculosis" bears as a sub-heading the scriptural quotation: "A wicked and adulterous generation seeketh after a sign, and there shall no sign be given unto it."

Four points are selected for comparative practice.

This sentence, he says, is highly applicable to the diagnosis of tuberculosis. A positive sputum is the only sure sign of tuberculosis, but finding tubercle bacilli in the sputum is not diagnosing tuberculosis in the modern sense of discovering the process in its early stages and in the minimum of time. Tuberculosis is diagnosed by a skilled technique plus a peculiar synthetic discipline of the mind. This harmonizes with the observation of Miller, who in the foreword says: "Physical signs are by no means always the most important evidence in making a diagnosis of pulmonary tuberculosis. In many, if not the majority of cases, the diagnosis should be suspected at least, if not really made, from the history alone, and in so many cases does it occur that physical signs are very scanty or absent or perhaps not pathognomonic, that if a student or physician acquires a habit of relying upon physical signs for diagnosis, many mistakes will result."

(This review secured by the Florida Public Health Association from the National Tuberculosis Association).



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